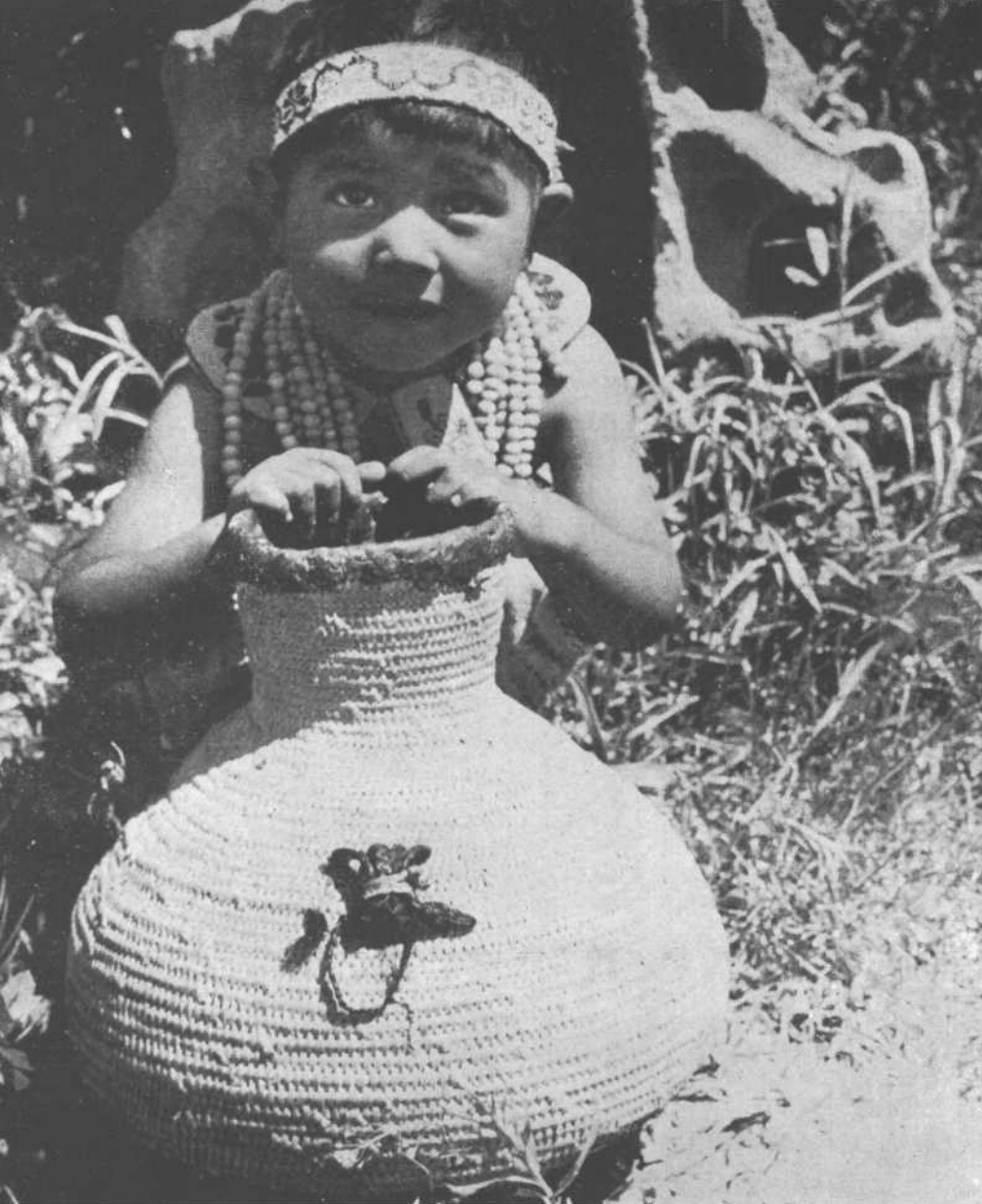


Desert

MARCH, 1957 35 Cents





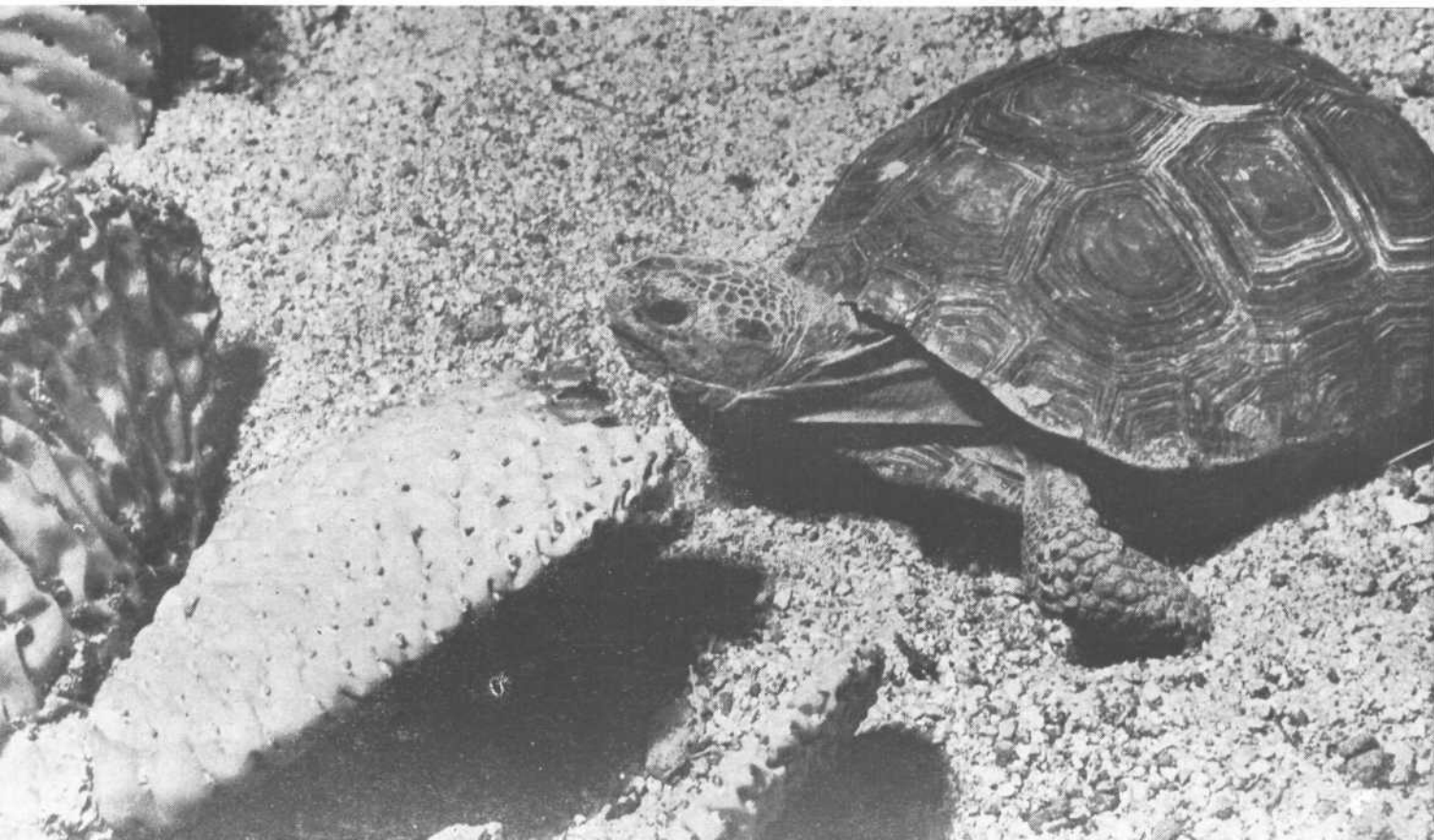
Ute Child...

"Do you mean hold it like this?" asked three-year-old Dru Schavanagh when Western author Nell Murbarger told her to hold that pose. Dru is a member of the Ute-Uncompaghre tribe and lives at Vernal, Utah. Miss Murbarger's prize winning photo was taken with a Rolleicord camera on Eastman Verichrome Pan film, 1/60 second at f. 16.

PICTURES OF THE MONTH

Lunch Time...

L. D. Schooler of Blythe, California, wins second prize in this month's contest with this photo of a desert tortoise busily munching off the tip of a cactus pad. Schooler used a 2¼ x 3¼ Graphic Camera, Ansco Isopan sheet film, 1/100 seconds at f. 22.



DESERT CALENDAR

- Feb. 20-Mar 13—Brownell McGrew Exhibit, Desert Magazine Art Gallery, Palm Desert, California.
- Mar. 2-3—Salton Sea Excursion, Sierra Club. Camp at Finney-Ramer Lake Game Refuge south of Niland, California. Excursions set for 1:30 p.m. Saturday; and Sunday morning.
- Mar. 3—Dons Club Lost Dutchman-Superstition Mountain Gold Trek, from Phoenix, Arizona.
- Mar. 7—Cattle Rustlers Ball, Wickenburg, Arizona.
- Mar. 9—Desert Museum Field Trip to Carrizo Canyon, from Palm Springs, California.
- Mar. 9-10 — Sierra Club backpack hike to Martinez Peak.
- Mar. 10—Out Wickenburg Way Style Show, Wickenburg, Arizona.
- Mar. 10 — Eighth Annual Almond Blossom Festival and Parade, Quartz Hill, California.
- Mar. 10—Western Saddle Club Gymkhana, Phoenix, Arizona.
- Mar. 11-17 — 22nd Annual Palm Springs, California, Men's Invitational Golf Tournament.
- Mar. 13-April 3—John Hilton Exhibit, Desert Magazine Art Gallery, Palm Desert, California.
- Mar. 14-17—Phoenix, Arizona, Jaycees World's Championship Rodeo, State Fairgrounds. World's longest horse-drawn parade opens event on 14th.
- Mar. 16—Desert Museum Field Trip to Lost Palm Oasis, from Palm Springs, California.
- Mar. 16-17 — Sierra Club camping trip to Magnesia Springs Canyon, Rancho Mirage, California.
- Mar. 17 & 31—Desert Sun Ranchers Rodeo, Wickenburg, Arizona.
- Mar. 19 — Ceremonial Dances and Feast Day, Laguna Indian Pueblo, New Mexico.
- Mar. 22-24—Dons Club Travelcade to Hopi Villages and Petrified Forest, from Phoenix, Arizona.
- Mar. 24—Maricopa County Mounted Sheriffs Posse Second Annual National Match Calf Roping Championship Contest, Phoenix, Ariz.
- Mar. 24—Bandollero Tour to Borrego Springs, California, from Yuma, Arizona.
- Mar. 24—Southern Arizona School for Boys Horse Show, Tucson.
- Mar. 24-26 — New Mexico Cattle Growers Association Convention, Albuquerque.
- Mar. 26—Visitors Club Outing to Cave Creek and Balanced Rock, from Phoenix, Ariz., Adult Center.
- Mar. 27-31—Maricopa County Fair and Horse Show, Mesa, Arizona.
- Mar. 28 — Visitors Club outing to Canyon Lake, from Phoenix, Arizona, Adult Center.
- Mar. 29-31—NCAA Ski Championships, Snow Basin, Ogden, Utah.
- Mar. 30—Desert Museum Field Trip to 49 Palms Oasis, from Palm Springs, California.
- Mar. 30-31—Flower Show, Woman's Club, Phoenix, Arizona.
- Mar. 30-31 — Sierra Club camping trip to Spring Tank Canyon near Desert Center, California.
- Mar. 31—Dons Club Travelcade to Ray-Hayden Mines, from Phoenix, Arizona.



Volume 20

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Desert Memorial for Patton's Army ...

Rapidly taking its place in the annals of Southern California desert history is that busy period during the early days of World War II when General George S. Patton trained and developed his fast-striking armored corps there. This is the story of efforts made in recent years to set aside a small portion of this terrain in lasting memory to this daring army leader and the men who served under him.

By ELIZABETH WARD

ON THE southwestern slope of Southern California's Iron Mountain in the rugged desert country where General George S. Patton's famous tank corps fought its war games, is the site of a proposed War Memorial Park. Contained within this 50 acre area are two imposing stone altars built by the troops and a huge relief map constructed by Army Engineers.

In this peaceful desert region today there is little sign of the teeming war time activity, although more than a half million troops were trained during World War II, in this wide expanse from the Nevada line to the Mexican border. Their various camps were widespread, but few scars remain on the desert's face except a few rutted roads and dim airfields. Gone are the extensive buildings, equipment and materials.

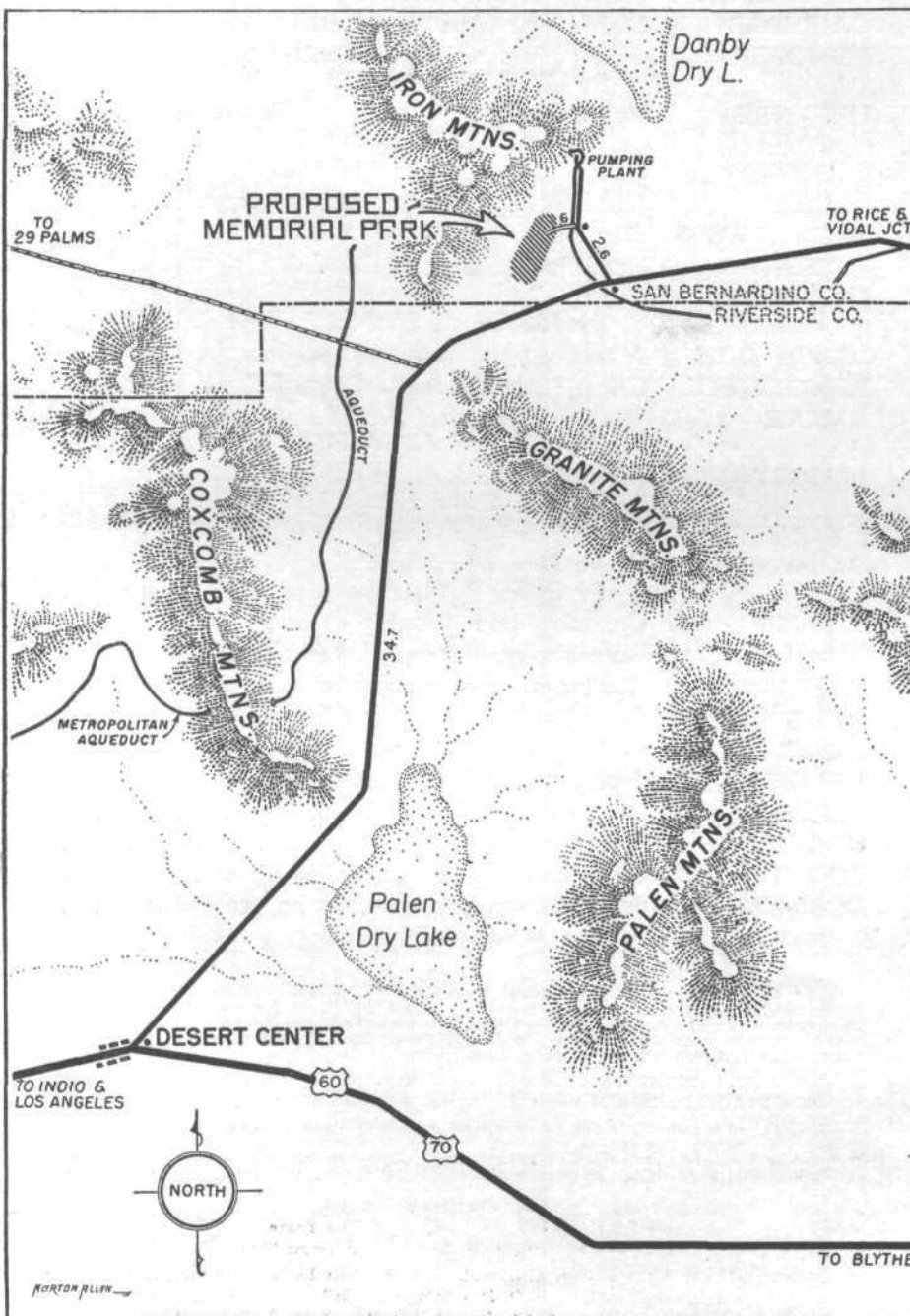
The heat waves shimmering over the tan desert floor emphasize the stark background for the enduring rock shrines, triumphs in beautiful masonry. One altar is heavily squared, built of rough sandstone boulders. Six hundred yards away, the other is classic in its design, with the cross outlined in lighter stones. Back of the granite chancel, Gothic windows frame inspiring views of colorful Iron Mountain. A curiously still, elusive spell seems to pervade the area, as if in mute testimony of the desert's healing of even the pangs of war.

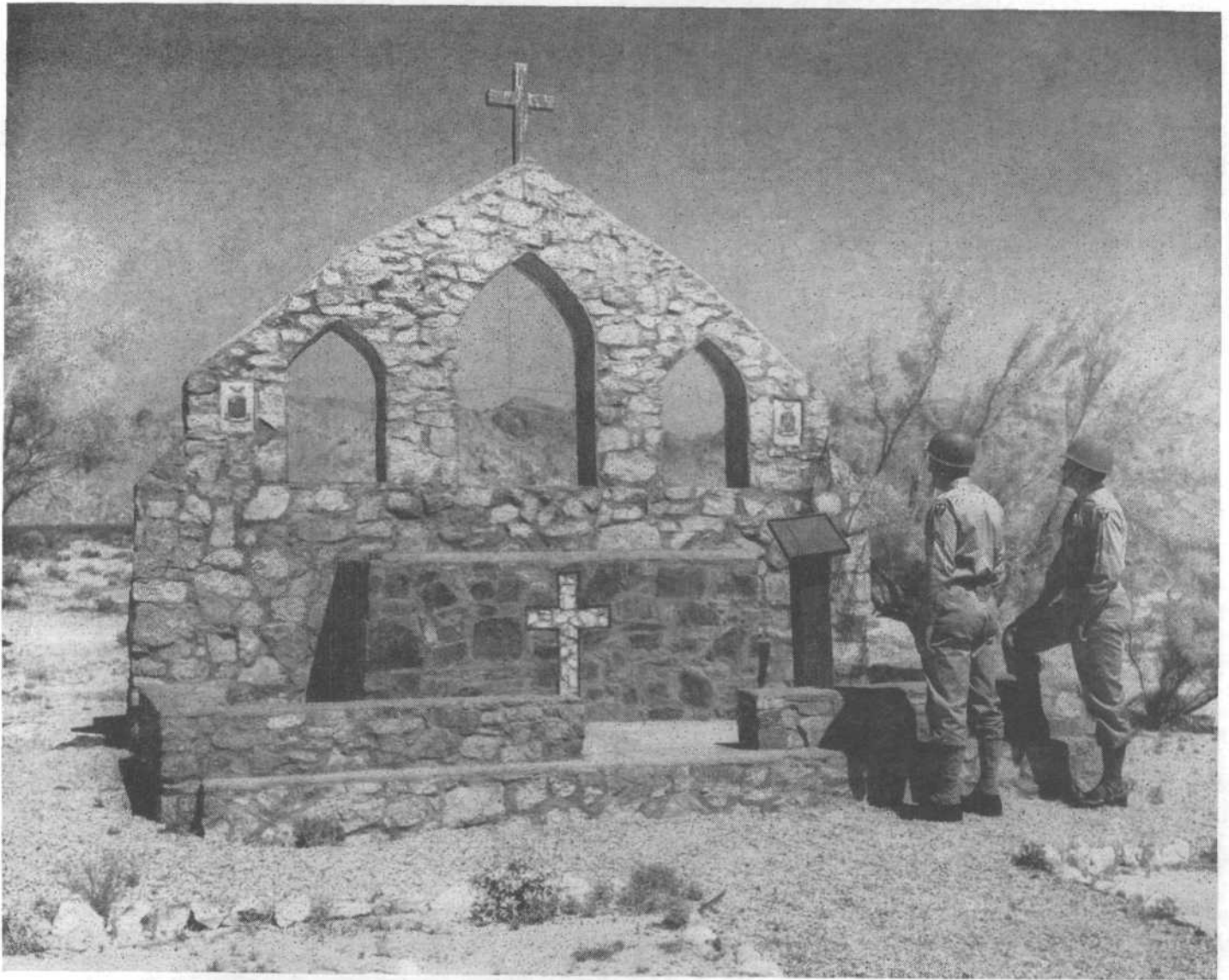
Flaming ocotillo, pungent yellow greasewood, dry yucca and blistering sun are typical of this vast area where free-wheeling maneuvers on a grand scale, representing great enemy numbers as well as our own, were held.

The character of desert training—the varied terrain, sparse vegetation, rugged mountains, steep defiles and rolling dunes, were particularly valuable in conditioning a soldier for actual combat experience. His mind was necessarily always on the alert—he knew he could die of sunstroke, thirst or starvation unless he learned the judicious use of water and supplies. The desert taught the soldier to be self-sustaining, as it had prospectors and pioneers before.

The scattered units of the Desert Theater of Operations, as the combined camps were known, were enlarged until even the desert was crowded. When the training was over and these divisions of troops, tank destroyers, artillery, signal corps and others were deployed to their various contingents, the officers in charge were justifiably proud of their men. They had the ability to take it. The desert climate and isolation took its toll of morale, but it developed leaders as well as fighting men.

Soldiers like General Walton Walker, later killed in Korea; and Major Generals Robert Crow and P. W. Wood became the most dynamic





*Soldiers' altar in the open desert country near Iron Mountain. Many miles from civilian churches, the troops regularly attended services under the desert sky.
Photo courtesy Metropolitan Water District of Southern California.*

armored leaders in the war—the reputation of the Armored Divisions grew as legends.

But, of them all, the name of General George S. Patton, “Old Blood and Guts” to his men, stands out brilliantly. In the desert he labored mightily to turn green recruits into efficient soldiers, and succeeded well as their official records show.

It was at Patton’s headquarters camp that the two enduring rock shrines were constructed, in contrast with the total lack of the usual civilian facilities. Here they still stand, giving the visitor insight into the creative beauty of men who had little of beauty in lives that were dedicated to destruction.

The huge relief map at the camp, windblown and almost obliterated by

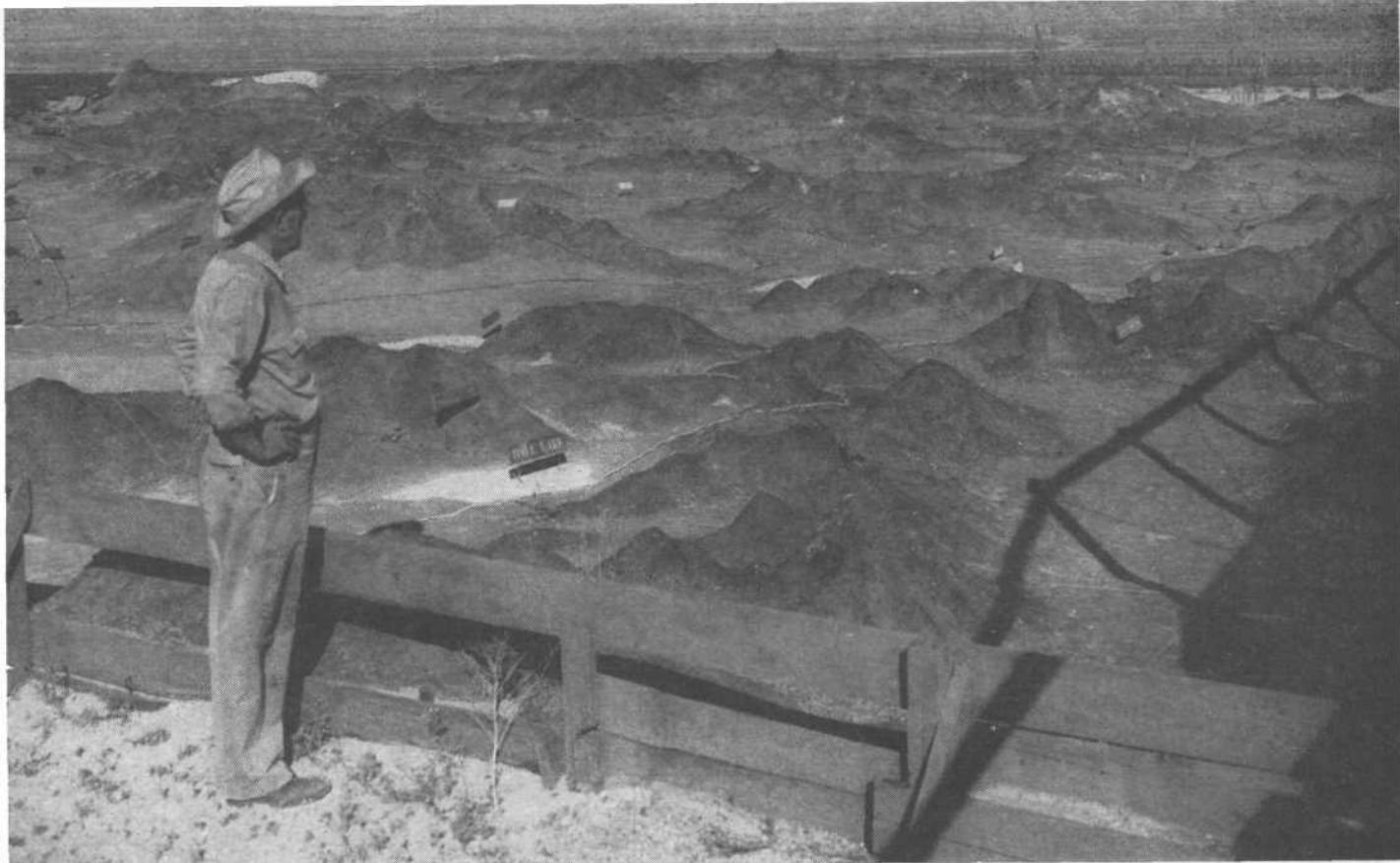
shifting sand, is a reminder of a grim and busy time. It reproduces in natural color the panorama from Yuma to Needles, from Salton Sea to the Arizona mountains. It was constructed of concrete to exact scale, showing roads, waterholes and mountains, and proved invaluable. Over the now sagging ramp, orientation classes were held and desert points and plans of maneuvers were illustrated. Mechanical warfare was new and terrifying. General Patton had a job to do and an over-all picture of the desert gave him a psychological advantage.

The shrines served a far different purpose. Before the rough rock altars, religious services were held regularly and attendance mounted steadily. Men who were on their way, division after division, received their final briefing at headquarters camp before sailing

overseas to capture Tunisia, storm Sicily or plunge ashore at the Normandy beach. The outdoor church under the desert sky smiled a benediction, and toughened combat veterans did not forget.

From far places they sent back news of their buddies—often tragic news—and the epitaphs of these men who had trained on the desert were engraved in the granite for perpetuity. Some may have found final resting places on foreign soil, but their memorial is on the desert.

Many hope these altars will stand as long as does Iron Mountain towering behind them, and it is here, where the Colorado River Aqueduct winds through the mountain bringing life to Southern California, the American Legion proposed a memorial park be established on approximately two sec-



This huge relief map was built a few miles west of the Iron Mountain pumping plant by Army Engineers with Patton's forces in 1942-43. The map measures 130 x 160 feet and represents an area of 32,000 square miles of Southern California desert country. Photo courtesy Metropolitan Water District of Southern California.

tions of government land in honor of the doughty general and his men.

The Metropolitan Water District now patrols the proposed site, doing what it can to keep the shrines in good repair. Officials of the company have expressed their continued interest in the project and Mrs. George S. Patton has given consent that the general's name might be used, but expressed hope that the boys would be remembered, too.

The Legion brought the case to the attention of the state senate interim committee on public lands, which responded favorably. Public interest mounted and when the veterans' organization requested his consideration of the area as a National Monument, Senator Wm. F. Knowland made a special trip to the desert shrine. Considering it worthy of higher notice, Senator Knowland took up the matter with the Department of Defense and received from it endorsement of the project. Encouraged, he introduced a bill to authorize the monument.

Congressman Harry Sheppard submitted a similar bill but both were blocked by the War Department which felt that too many war memorials were being rushed through and suggested action on the state level. So the proposition was whipsawed back to Sacramento and here it rests today. There

have been more obstacles and delays due mainly to the involved financial aspects of the project.

Since the end of the war, many soldiers have returned to the shrines to kneel in thanksgiving and in reverence to the memory of those not returning. The boys who trained here came from all corners of the nation and on vacation trips to the west coast some take the off-trail road from Desert Center or the new cut-off from Twentynine Palms. They show their families, with more than a little pride, the rugged terrain in which they learned the bitter art of fighting a desert war.

To reach the shrine drive 34.7 miles north of Desert Center on the paved Rice road to the Pumping Plant turn-off and then proceed 2.6 miles up this road. A narrow graded road leads from this point to the first of the altars about three-quarters of a mile distant. There is no entrance fee.

A route seasoned desert travelers like is the new county road leading east from Twentynine Palms. Forty-six miles from that lovely desert city, past Dale dry lake, Sheep Hole Mountains and Cadiz Valley, the new route joins the Desert Center-Rice highway eight miles below the Pumping Plant turn-off.

Many of the returning veterans and

other visitors have added their pleas to those of the Legion and other service clubs, notably the Native Sons of the Golden West, in urging the desert memorial.

Actor Leo Carrillo, descendant of a pioneer California family as was Patton, enthusiastically supports the memorial. Declaring that the state has been lax in preparing a suitable memorial to one of her most famous native sons, Carrillo pointed out that an appropriate memorial rightly could be erected in this San Bernardino County location for the general's grandfather, Don Benito Wilson, was a county pioneer.

Don Benito owned a ranch near Colton and discovered and named Big Bear Lake after leaving Los Angeles where he had served as the old pueblo's first city clerk.

While efforts to have the domain set aside as a state park have been fruitless so far, the granite boulders still stand, carved with fading sentiments attesting to the valor of soldiers who fell in the field of battle.

Whether there ever is official recognition or not, the symmetrical altars, built by the hands of desert fighters, speak for the men who will not assemble again. The people for whom the war was fought will not forget—the desert shrines will remain.

Jasper Trails in the Barstow Badlands...

Here is a field trip for those who would hike back through the twisted and torn pages of Mojave Desert geological history—into the Barstow Syncline, a vast sedimentary bed worn by the relentless forces of erosion into a fantastic land of deep fissures, strange buttes and furrowed walls. Collectors can find here prized specimens of jasper, fossil bones and lichen-encrusted volcanic rocks.

By HAROLD O. WEIGHT
Photographs by the author
Map by Norton Allen

LUCILE AND I had twin goals one bright and windy day last fall when we headed north from Barstow, California, on the Camp Irwin highway: to explore the fantastic badlands of the Barstow syncline, and to relocate a field in that area where I had collected my first gem rock nearly 20 years before.

Our friend Mary Beal of Daggett, famed Mojave Desert botanist, and her friend, Grace Smith, were with us. Mary was going to guide us through the badlands, which she first visited with the late Dix Van Dyke when the only approach was by winding, rutted wagon roads.

In those days the ancient downfolded sedimentary beds seldom were visited except by prospectors or scientific fossil-hunting expeditions. The fossil-diggers still find treasures there, and the uranium excitement brought in a new wave of prospectors. But most of today's visitors come primarily to marvel at this wonderland of erosion which has become a major scenic, photographic and geologic attraction of the Barstow region. And though the scientists named the whole exposure the Barstow syncline, some of its parts are far more widely known as Rainbow Basin, the Fossil Beds and Owl Canyon.

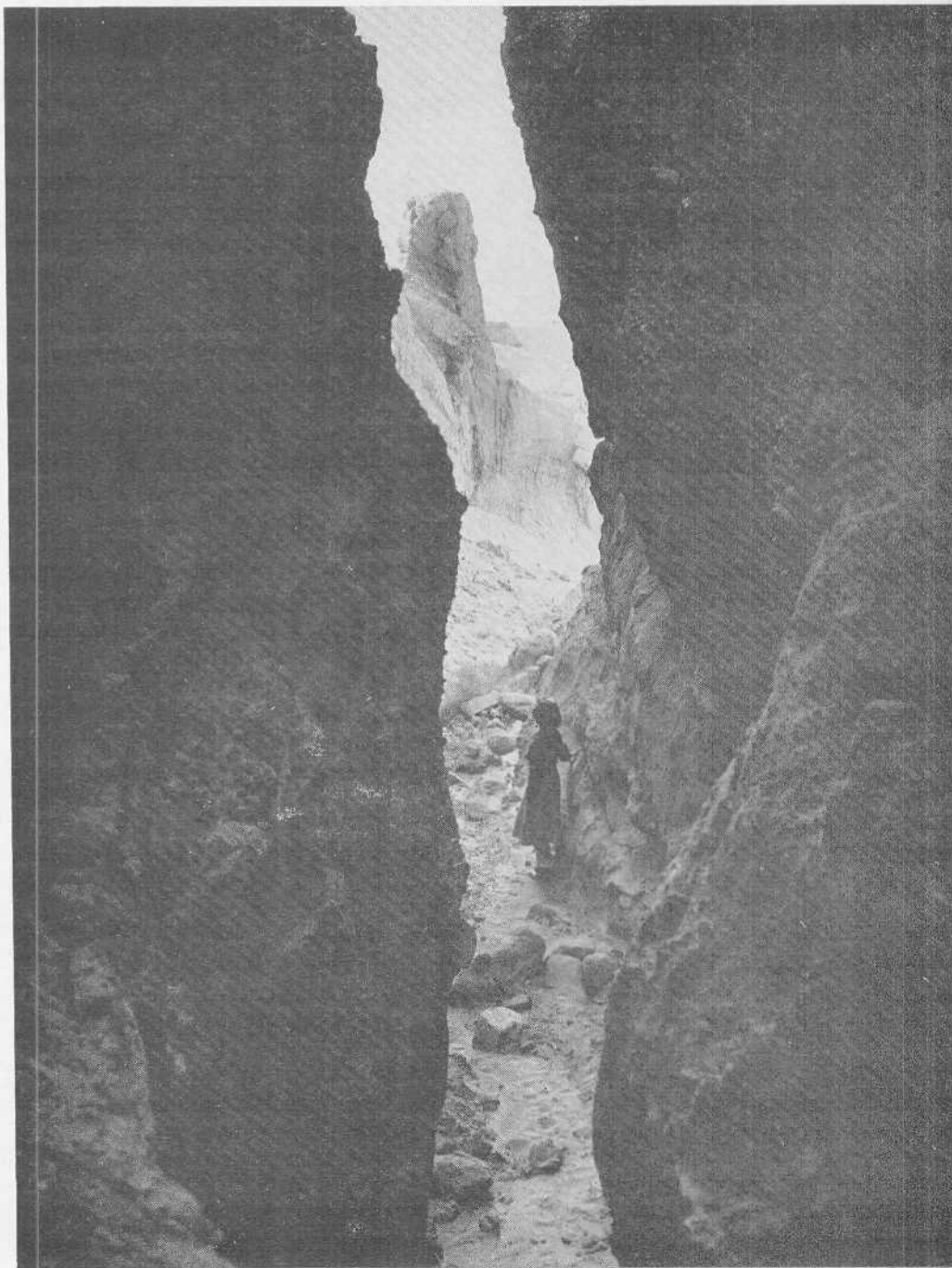
And now it is far easier to reach this spectacular corner of the Mojave. Seven miles out on the pavement, we turned left (westerly) onto a good bladed road with an inconspicuous white arrow-sign: "Fossil Bed." Three miles further we turned right (north) where other signs read: "Fossil Bed" and "One Way." Minutes later we

were winding up a wash among the whites, buffs, pale greens, lavenders and reds of tuff, clay-ash and breccia, and through basins and valleys crowded with astonishing formations, fantastic

cliffs and weird buttes, weather-sculptured from the ancient sediments.

This one-way road was narrow and twisty in places, with abrupt little grades, rough stretches and spots that might be soft after storms. But for the most part, as it wound through Rainbow Wash, Rainbow Basin and Steamboat Canyon, it was good desert road. Any experienced desert driver of any car with reasonable clearance should be able to negotiate it. That was not true of some of the side trails along which Mary guided us. They are for four-wheel-drive or walking.

Looking out from a deep fissure in the Barstow syncline. In places this gash can be spanned by the outstretched arms, but the walls tower up hundreds of feet.



For full scenic enjoyment of this wonderful country, a lot of hiking should be done, anyhow.

One cannot appreciate the height or fantastic erosion of these formations until actually climbing among them. One dark gorge in a great breccia cliff was so narrow it could be spanned with outstretched arms. Yet the water had sheared so sharply down through the formation that those walls towered almost vertically for hundreds of feet above us. And the tiny sand-floored cove at the head of the crevasse was actually undercut into the cliff. Bracing against the wall and looking up the dark curve of the sedimentaries to the small far patch of blue sky, we felt as if we were standing in the ruins of an ancient cathedral.

Returning to the Joshua tree where

we had eaten lunch, Lucile found a fine small piece of petrified bone. At several other places in these badlands we picked up shattered bits of fossil skeletons. What kind of animals had they come from? We wondered. What had this country looked like when those animals were alive?

We present-day rovers of the Mojave wouldn't have recognized this land back in late Miocene times—15,000,000 years ago—when these sediments were laid down. It wasn't swamp or jungle or heavy forest, according to paleontologists who have made enlightened guesses about the matter. But there was more water and vegetation—running streams and lakes, sabal palms and grasslands. And there was a great deal of vulcanism that dumped ash and dust into the lakes and streams

and helped seal away the bones of the dead.

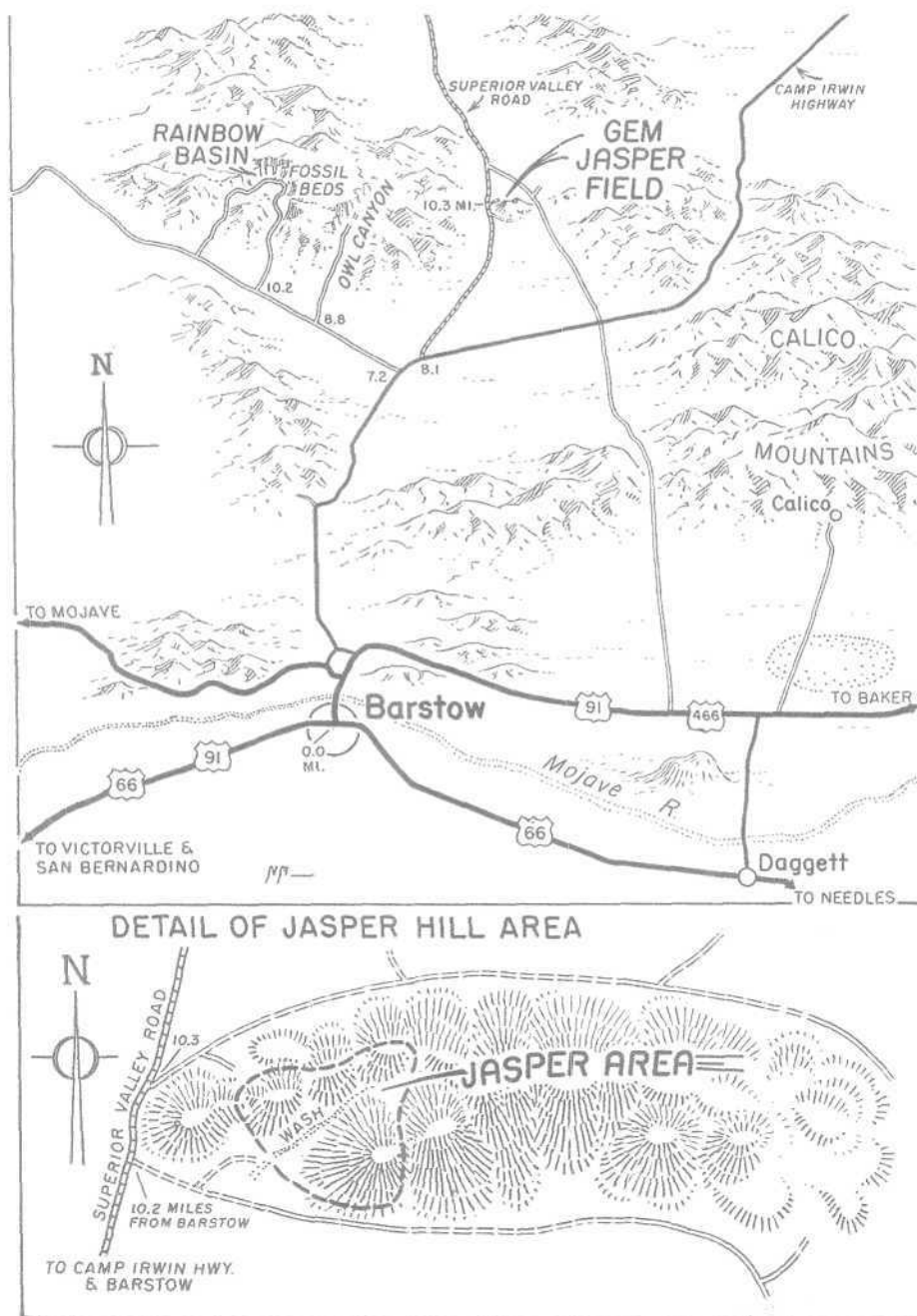
Some of the creatures that inhabited this lost land we would have known—the ancestors of rabbits, chipmunks and pocket mice, and some hawks, gulls and ducks. Certainly one of them would have given a downright homey feeling to any desert rat—a beaked, horny shelled poke—along known as *Testudo mohavense*. Our own desert tortoise seems to have differed from this character only in that Grandpa was about twice as big.

But others among the Barstow fauna would have startled us. For in this roster were camels, mastodons, saber-toothed cats, bear-dogs, hyena-dogs, sizeable extinct creatures called orodonts, and at least three varieties of primitive horses.

As their story is pieced together from the debris of the Barstow syncline, these creatures apparently did not perish in some unusual personal or mass catastrophe. They were not caught in a La Brea-type tar pit nor buried by an ash fall. They died in the usually violent manner which was natural to them, and their bones were weathered and scattered before being entombed by the relentless accretions of time.

But the era itself—the Miocene (less recent) segment of the Tertiary age—and others since, did know earth-making violence. And these sedimentary layers are folded and twisted around the sides of an ancient granite mountain as if some incalculable force had thrust them up its slope. In places they are both under and overlain by flows of volcanic rock.

The syncline itself was divided by



BARSTOW FOSSIL BED AND JASPER FIELD LOG

Miles

- 00.0 Barstow (Junction of Highway 66 and 91).
- 07.2 Left branch to Barstow syncline and Rainbow Basin (see below). Continue ahead on Camp Irwin highway.
- 08.1 Leave Camp Irwin highway for left branch, marked Superior Valley.
- 10.2 Faint auto trail, branching right, leads to southwest edge of Jasper field, about .2 of a mile in.
- 10.3 Right branch. Follow it to about 10.4 where another right branch ends at northeast edge of Jasper field.

TO RAINBOW BASIN AND FOSSIL BEDS

- 07.2 (From Barstow) Leave Camp Irwin highway for left branch.
- 08.8 Right branch leads to mouth of colorful Owl Canyon. Continue on main road to
- 10.2 Take right branch, beginning of one-way road into Barstow syncline and Rainbow Basin.

C. L. Baker, an early investigator, into five beds. They are, from bottom to top: Basal Breccia, rock fragments several hundred feet thick; Tuff-Breccia, over 1000 feet of finer fragments with much more volcanic ash, cream through red, purple, brown and green; Fine Ashy and Shaly Tuff, 500 feet, ash toward the base and compact mudstone toward the top; Resistant Breccia, 1000 feet of gray, brown and red ash and coarse rock fragments, which weathers into the characteristic badland formations; Fossiliferous Tuff, grading from breccia to sandstone, the top portions of which have weathered away.

Most of the fossil bones have been recovered from the top stratum, with some from the breccia immediately below. The first specimens to be brought to scientific attention were gathered by H. S. Mourning, according to John C. Merriam's *Tertiary Mammalian Faunas of the Mojave Desert*, University of California Press, 1919—still the most complete account of the beds. In 1911 C. L. Baker of the University of California, began working in the syncline. An expedition led by Mourning and J. P. Buwalda collected extensively early in 1913. Since, the Frick American Museum and many other groups have worked in this area.

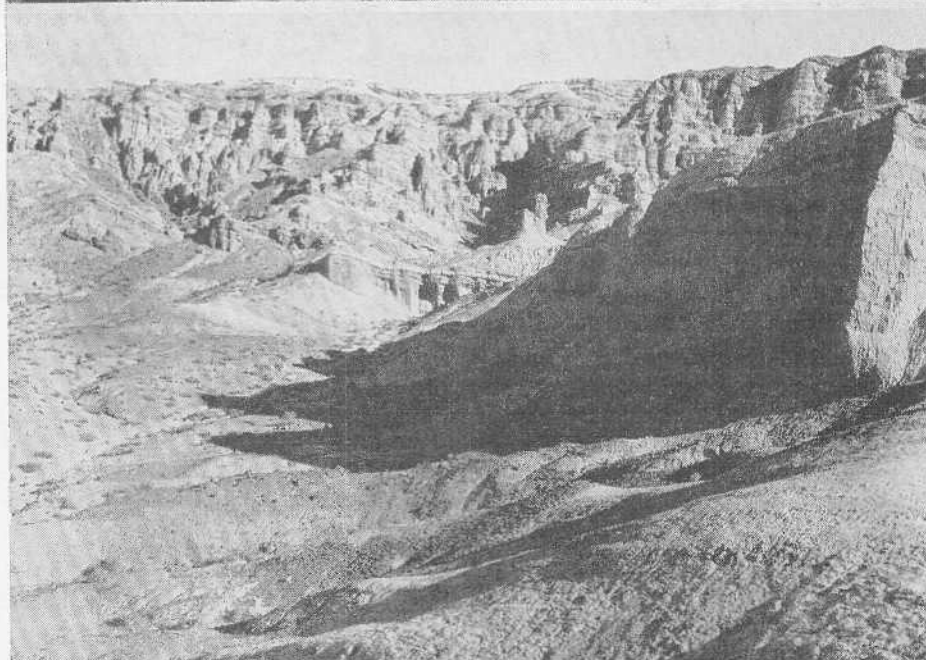
As rock collectors, we naturally considered the possibility of the fossils from that point of view. They are curious and fascinating mementos of times long past on the Mojave. For that reason—and because they make striking talking pieces — we wanted samples. And since the bones were scattered to begin with and since broken bits of them have, for countless years, been washing down from the top layers through the wastes of the badlands, we felt such bits could be picked up without paralyzing scientific research. Wholesale excavation is not, of course, a weekend pastime for amateurs, nor do these fossils offer anything of value to the gem cutter.

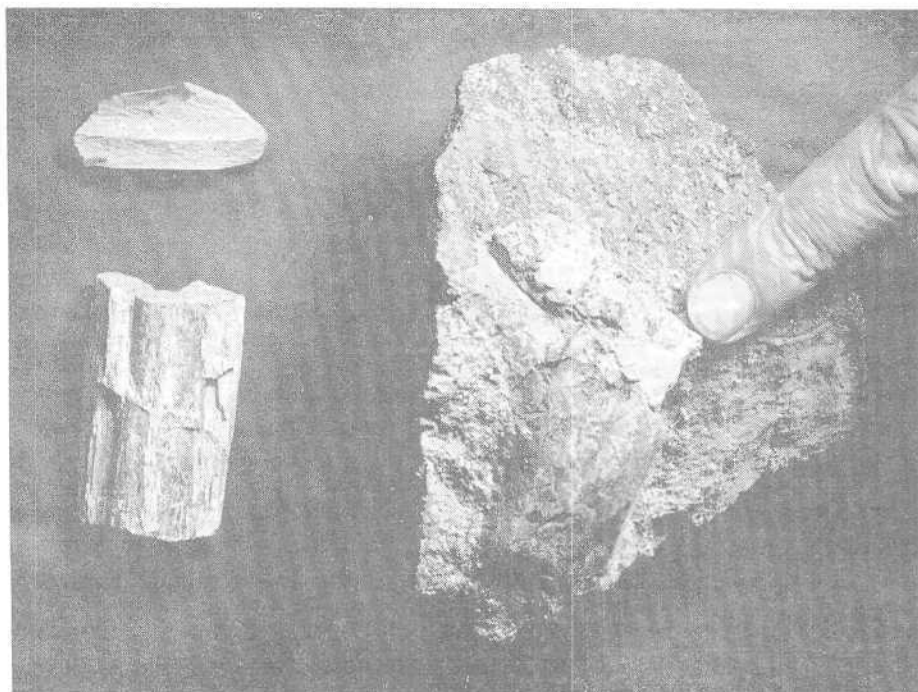
But I was certain that more rewarding rock was to be found not too far away. That certainty went back to the 1930s. At that time I was an addict of deep sea fishing. But each damp

Top—Some of the strange erosional features of the great sedimentary beds exposed north of Barstow.

Center—the Magnificent display of erosion in Owl Canyon.

Bottom—One of the great walls in the syncline. Bits of fossil bone, which have washed out from upper layers, can be found scattered through the basin, left. Note figure in left center.





Bits of fossil bone of Barstow fauna, found in Rainbow Basin area. Specimen at right still is cemented in breccia. Those at left were washed out from the upper tuff beds. Pictured below are plume, moss and thread jasper specimens.



gray dawn when I would be heading out from some sport fishing dock for the waters off Catalina, my mother and father would be driving out into the desert. When I came home with blue fin or yellowtail or white sea bass to carve up, I would find the kitchen sink already appropriated. Dad would be soaking, scrubbing and gloating over pieces of rock, each of which he treated as something precious.

They were unusual rocks—pieces of pinkish chalcedony, I learned later. Still, I was uncertain whether people acting that way about rocks were to be trusted out alone in the desert. So one weekend I went along, as a sort of guardian.

I've never gone back to deep sea fishing.

That first trip, Dad drove as close as possible—taking an old mine road off the Cave Springs road—to a reddish-brown butte north of Barstow. And I found that it was interesting to hunt bits of chalcedony. We went again to the same place. On one trip, climbing high into a saddle of the mountain, I found pieces of feathery yellow jasper in clear chalcedony with included bits of brownish opalite. Soon we started traveling to collecting fields all over the Mojave and Colorado deserts.

After realizing just how good those pieces of cutting material were, I in-

tended to return to that first field to see what else was there. Though the roads had changed in the years between—the Cave Springs route being replaced by the Camp Irwin highway, old mining trails washing out, new ones being opened—I thought I knew the mountain I wanted. And though it was much later than we had planned when we came out of the syncline, I drove back to the paved highway, followed it another mile toward Camp Irwin, then turned left (northerly) onto the Superior Valley road. A reddish-brown butte I recognized lay just to the east of this road. It was only two or three miles away, but the sun was almost on the horizon when we followed a trace of auto trail to its northwestern base.

Even when I climbed swiftly over the steep slopes in the gathering dusk, I was not certain that I had guessed right. But in a matter of minutes I saw a bright chunk of rock in the small drainage channel I was following. Examining it closely, I saw it was a beautiful piece of reddish moss jasper of cutting quality. And in the remaining twilight I found several more bits of gem jasper.

We had to be back in Twentynine Palms by morning. Obviously, another trip was imperative and a week later we were heading back. Along with us this time was Elma Marvin, artist friend of Twentynine Palms. But the weather had changed, fall plunging suddenly into winter. Leaden clouds covered more than half the sky as we turned off at the reddish mountain, this time following a faint mining trail at its southwestern edge. From this trail we headed into a small cove between the main mass and a greenish spur at the western end.

The wind was icy as we hiked up the wash. But the bits of highgrade jasper we commenced to find, almost immediately, kept our minds from the cold. A little exploration showed that it was scattered from the wash to the first peak of the mountain in an arc around the northwestern, western and southwestern slopes. Most of the pieces were small, and though we located several places where the broken and discontinuous veins crop out, we did not find the jasper in large quantities anywhere. But there is enough of it, in cabochon sizes and larger, scattered over a wide enough area to supply prizes for a good many rockhounds. And it includes a high percentage of highgrade—moss, plumes, feathers and threads of reds, yellows and greens in clear chalcedony and sometimes fortification agate. Much of the material closely resembles that from the Lavie and Cady areas.

We were chilled and hungry by the

time we had collected a good selection of rock. To hunt shelter, we drove back to the Superior Valley road and around to the other side of the mountain where we had stopped on our earlier visit. The trail ended in a narrow gulch in which there had been some quarrying or mining operation.

When we had finished lunch, the edge of the cloud bank was almost over us. Shafts of sunlight breaking through with increasing frequency made rockhunting more pleasant. There was more of the jasper on this side, too, though it did not extend far to the east. But Elma Marvin almost immediately found rough volcanic rocks which she considered finer prizes than the jasper. These were pieces from pebble to boulder size covered with lichens, some with four or five kinds on one rock—exactly what she had been seeking for her cactus garden.

Lucile, exclaiming that they were in the biggest variety she had ever seen, identified the colors as bright orange, primrose green, lavender, chrome yellow, sienna, mustard, chartreuse, blue-lavender and black. Some botanists say lichens occur normally on north or northeast slopes, but Lucile particu-

larly noticed that here those on the west and southwest slopes were as bright and fresh-looking as the others. Jerry Laudermilk gave a fine review of lichens in *Desert Magazine* (March, '42) in which he described them as "a case of peonage," in which an alga and a microscopic fungus grow in more or less friendly cooperation—with the alga doing all the hard work.

Since it looked as if Elma and Lucile were going to take a bit of time to choose the prettiest and most varied lichen rocks to take home, I hiked up to the ridge of the mountain to explore it on to the east. It was a rough climb, almost vertical in places, but the magnificent panoramas across the Mojave—especially of Barstow, Calico Dry Lake, Daggett and on over the Ord Mountains where black storm clouds were boiling—made it worth-while. And then, in a saddle near the eastern end of the mountain, I came upon a quartz ledge with kidneys of the identical feathery yellow jasper and brownish opalite which I had found in the '30s.

Down near the level of the great valley slope, as I made my way back to the car, I stumbled over a little freshly

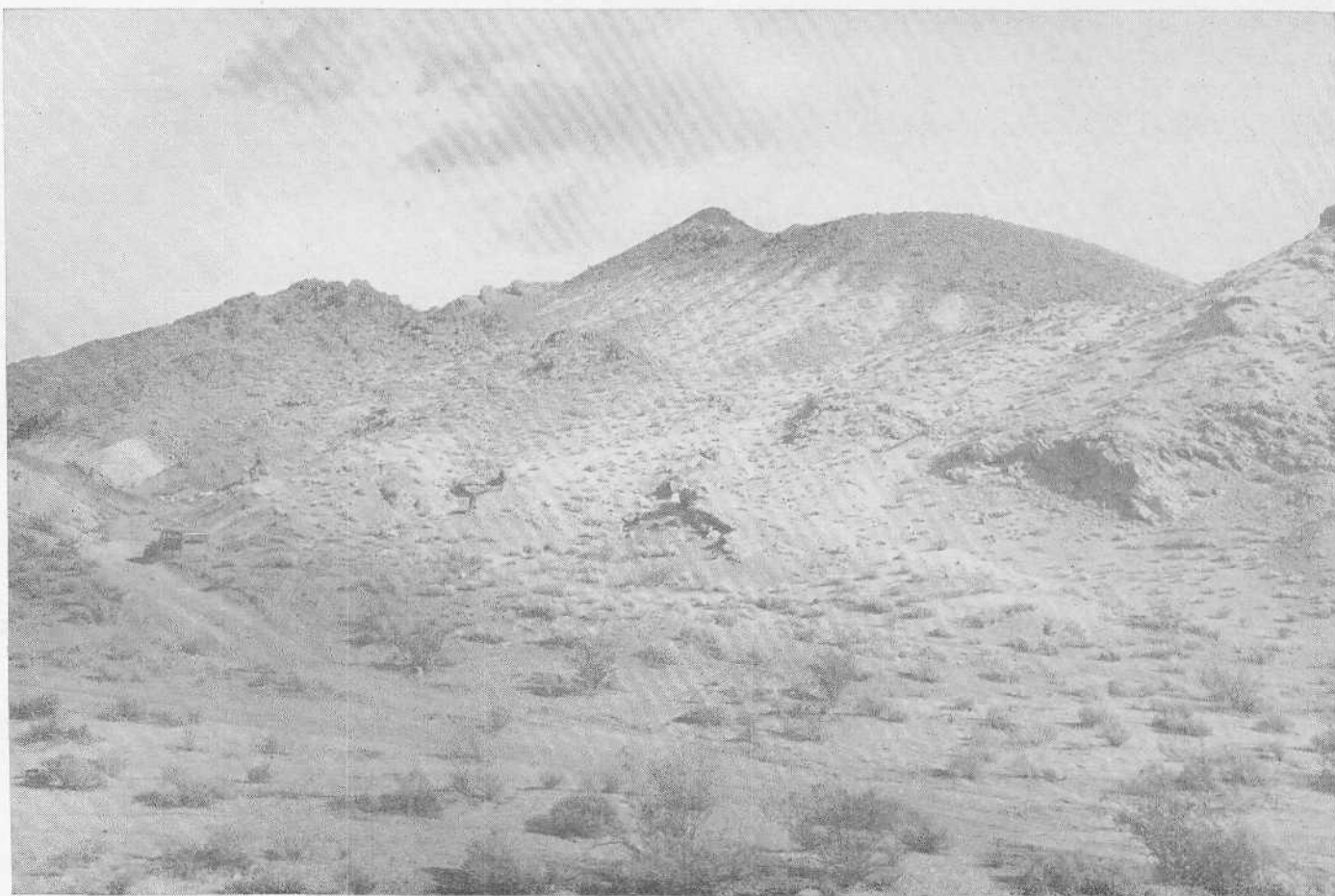
dug pile of earth. Looking into the small slanting hole above it, I discovered a desert tortoise blinking back at me. Apparently fooled by the warm fall into staying out late, he now was hastening to dig in for winter hibernation.

"Hello, oldtimer," I said.

He blinked again, doubtfully. Then, in slow motion, he retracted his head into the shell. The feet and absurd little pig tail followed. There was something so decisive about the action that I was certain he wasn't coming out again.

Smiling, I looked up to go on my way. The sun was now below the cloud bank and its brilliant shafts were spotlighting some of the eroded beds of the Barstow syncline in the valley to the west. My eyes were drawn back to the dusty little creature in his shallow hole. How right I had been to call him oldtimer! His family probably can claim title as the oldest on the Mojave. Only a few miles away to the west were the tuff beds from which the carapaces of *Testudo mohavense* had been dug. Here at my feet was

Looking east at the reddish-brown mountain near Barstow where cutting grade jasper is found in the dark upper area, center and right on out of the picture. Specimens also are found in center and right foreground.





Lucile Weight and Elma Marvin dig red and green jasper from a fractured vein.

a bit of life that had bridged 15,000,000 years almost unchanged.

Today, it would seem, the tortoise is facing the severest crisis of his long career. Trona rockhounds, recently scouting the Mojave from Ridgecrest to Hinkley, reported they did not see a single large specimen, though there were many up to six inches across. Since it is largely during their earliest years that these creatures fall victim to such enemies as the coyote—who can chew through the smaller, softer shells—the big tortoises must be falling victim to Man's destructiveness and thoughtlessness.

In the old days these peaceable reptiles supplemented the food supplies of Indian and prospector, but the race survived handily. Today many are killed ruthlessly and purposelessly by those whose perverted nature is satisfied by the destruction of defenseless life. More are carried off to cities to die in captivity or in attempts to return home. I hope every desert lover will do his best to reverse this trend. Contempt, boycott and social disapproval are powerful weapons.

I thought about it as I drove back from the quiet desert to the world of ever faster and more powerful automobiles, louder entertainment, bigger and more deadly weapons, multiplying political crises, expanding mental illnesses—and the little man's helpless sense of shrinking liberties.

In the matter of survival, I'm bet-

ting on the tortoise. But should he pass from the scene, he leaves quite a record for Man to attempt to beat. His family goes back many, many millions of years before the Miocene; his fossil remains have been found in almost every continent. Will *Homo sapiens* be around to enjoy life even as much as the tortoise 15,000,000 years from now? We can hope so and we can work for that end.

Is there a lesson for us in the fact that this cautious and retiring fellow (with a good stout castle to retire into) still is ambling unconcerned on his meditative way while the infinitely superior types from the point of brain, muscle, armament and bulk—the saber-toothed tiger and the mastodon—have vanished? It is a curious thing that of late considerable thought has been turned to the ways of the tortoise—wide dispersion, holes in the ground and strong shelters—as last hopes for preserving our records and our lives.

It may be said that the tortoise hasn't gotten far in the last 15,000,000 years—from an evolutionary standpoint or in actual physical distance. But in fact as well as fable, he is living evidence that the race is not always to the swift, survival not always to the strong.

And for those of us who can take advantage of it, perhaps the tortoise offers another lesson: for his long survival he had chosen the sunlight, the peace and the wide horizons of the desert.

"Desert Memorial for Patton's Army," in this month's magazine, was written by Elizabeth Ward who is well known to Southwestern readers for her book, *No Dudes, Few Women*, published in 1951. Currently she is preparing a second book, *South of the Gila*.

Mrs. Ward's early writing career began in New Mexico as a newspaper reporter and magazine editor. Marriage to a government range rider took her to the Navajo Reservation where she shared his rugged life among the Indians 90 miles from the nearest post-office. Later her husband was transferred to the Papago area in Arizona where he supervised a special livestock improvement program. The Wards now live in San Bernardino, California.

* * *

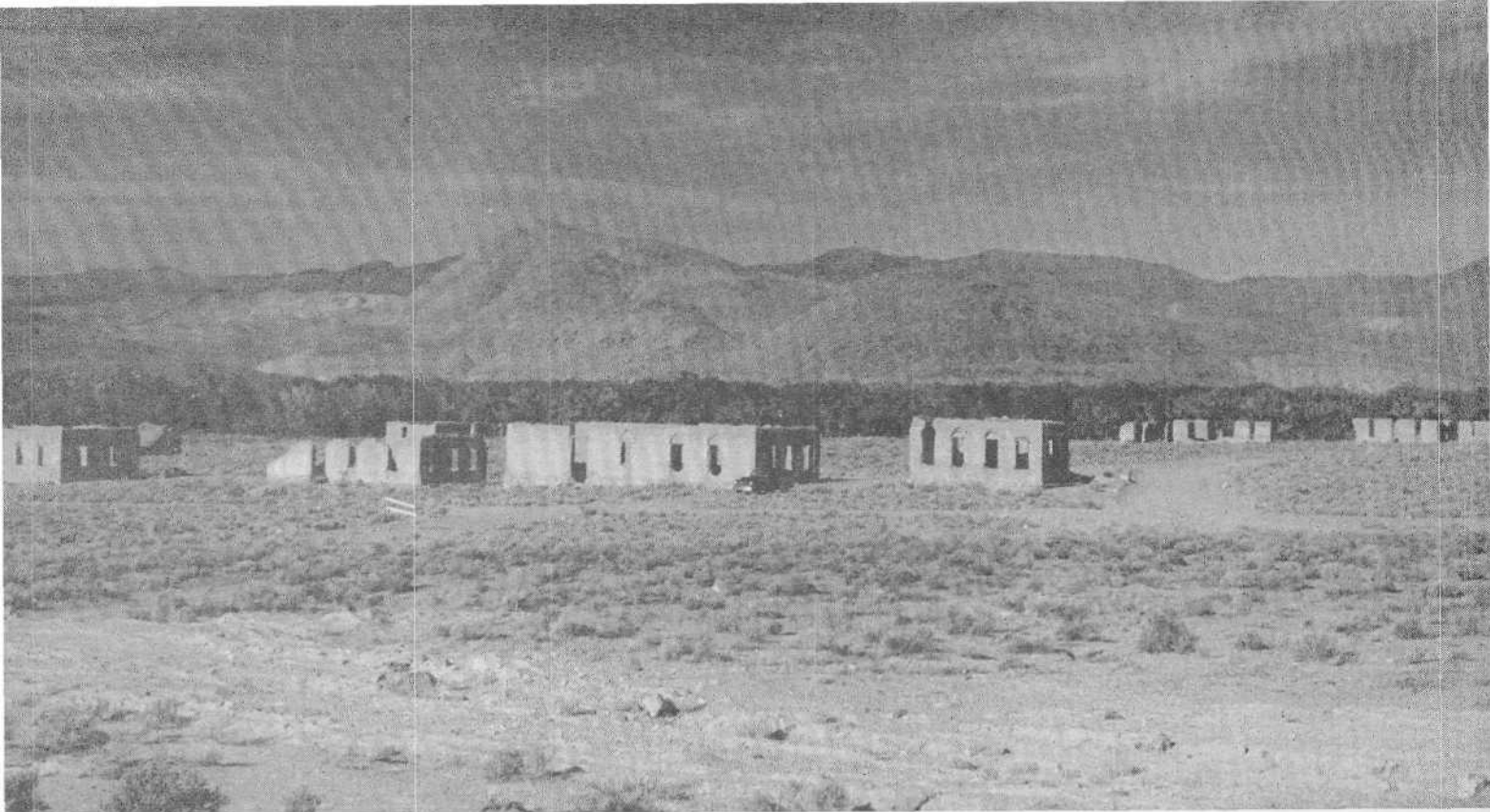
Until his death in February, 1942, James L. Jasper was regarded as one of the greatest living authorities on the geography and history of the Colorado desert in Southern California. He had served as a supervisor in San Diego County prior to the time when a new county was formed in the Imperial Valley, and since his supervisorial district included the desert region as far east as the Colorado River, he made frequent trips into the area. Some of the old sign posts which he erected along the old Butterfield trail were still in place in recent years. His conclusions as to the character of Pegleg Smith, published in this issue of *Desert Magazine*, were based on the hearsay of old-time prospectors whom the supervisor met in the desert, some of whom claimed to have known Pegleg personally. At the time of his death Jasper was in his late '80s and was making his home in Glendale, California.

* * *

"Cattle Drive to Winslow" in this month's *Desert* was written by Bernetta "Billie" Yost of Flagstaff, Arizona, a newspaper woman on the *Arizona Daily Sun* and long-time resident of the northern part of the state.

Mrs. Yost's parents were pioneer settlers of Arizona Territory, her father arriving in 1882 and her mother in 1895. Mrs. Yost's grandfather, John P. Williams, built the first trading post in Blue Canyon 100 miles north of Winslow in 1882 and her father ran the Keams Canyon Trading Post for T. V. Keams for a while before moving to Red Lake.

Mrs. Yost started her newspaper career at the Winslow Mail in 1927.



Old Fort Churchill. Photograph by Nell Murbarger

DON Q. CHAPARRAL

By GRACE PARSONS HARMON
Desert Hot Springs, California

He was such a young roadrunner bird,
Out to explore the place.
He "cased" the patio, took a drink,
Then looked for a breathing space.

The carport had the draft he sought.
He hopped on my coupe,
Spread out his wings and heaved a sigh:
"Best spot I've seen today!"

Refreshed, he took his outward way.
What ho! His hackles rose!
He wagged that tail from side to side—
And "rushed" the new green hose!

DOWN A DESERT HILL

By JEAN HOGAN DUDLEY
Culver City, California

As I drove down a desert hill
I glimpsed a moon-white flower, grown
Against the rocks, as pale and still
As any blossom I had known.

I had no time to stop and turn
To see the dream-soft blossom there,
To touch its petals, or to learn
What scent it showered on the air.

And yet all day I've wondered why
I didn't wait and gaze my fill . . .
It seems we're always rushing by
White flowers, down some break-neck hill.

THE DESERT IS WHERE MY HEART BELONGS

By MARILYN JANE DONAHUE
Pomona, California

Back in the east they said to me,
"The desert is no place to be.
All sand and cactus; just wait, you'll see,
The desert is no place to be."

I'm in the west and the east is gone.
I know now that the east was wrong.
The sand is warm, the mountains are strong.
The desert is where my heart belongs.

Old Fort Churchill

By K. C. JONES
Fallon, Nevada

Solitude surrounds
Your crumbling 'dobe walls;
Across your old rhomboid
A long mauve shadow falls.

The jangling mule-team bells,
The skinner's strident yells,
Hoarse camel-cries—and smells,
Band-music's martial swells
All stilled.

A Pony's flying feet
Rushing down your street;
Cries of "Paiutes at war!"
So often heard of yore;

The dashing First Dragoons
Marching to lively tunes—
All these are passed and gone
Into oblivion.

No one would ever know
Your former pomp and show!
Now only crumbling 'dobe walls
'Cross which mauve shadow falls
Remain.

The Gift

By TANYA SOUTH

The old departs. The new comes forth,
With promise of a higher worth.
The Star of Hope shines bright. No
more
Need I bewail, decry, deplore
The lack of opportunity.
Whatever be Fate's harsh decree,
Life showers abundance, too, our way,
By giving us Today.

WILDFLOWERS

By SARAH ELIZABETH LAMPE
Gardnerville, Nevada

You picked some wildflowers yesterday, and
so did I,
We plucked with ruthless hands in passing
by,
A gentian blue, a shooting star,
Some trilliums—we wandered far,
And broke a spray off here and there,
That hung o'erhead in perfumed air,
And once or twice a whole plant came
Up by the roots—a living flame
Next caught our eye—
You didn't stop to think—no more did I.

We didn't stop to think how many months
went by—
Snaring the sunset's gold, the blue of sky,
The palely-shimmering rose of a straying
moonbeam,
Some limpid crystal from a wildwood
stream,
Too precious, woven in life's fragile strands,
To be thus rudely snapped by vandal hands.
Nor knew the struggle of each tiny seed
Just to keep living and to give heed
To the divine command to blossom forth,
To spend its perfume — to make glad the
earth.

And when we saw their stricken little faces
Looking up bravely from the polished vases,
Then in our inmost hearts, too late, we
knew
They had left their greatest beauty where
they grew.

BLOW EAST, BLOW WEST

By GRACE SHATTUCK BAIL
Beaumont, California

When the wind blew in I used to complain,
And close my ears to the song;
But my greeting now, is a joyous shout,
When I hear the wind come along.

For I am a child of the sand and sun,
And I like the whistling cry
Of this airy orchestra of the spheres . . .
When wind comes frolicking by!

Desert Storms Send March Wildflower Hopes Soaring . . .

Generous amounts of rain and snow fell over most portions of the Southwest in two separate January storms, and the prospects for an abundant display of wildflowers were heartening.

Meredith B. Ingham, Jr., park naturalist, reports that Death Valley received its first good rain in many months and that the chances for a fine March display are excellent. March and April will be the period of peak bloom for evening primrose, phacelia, five-spot, Mojave aster, monkey flower, desert-star, gravel ghost and nema while desert gold should reach its peak in March, Ingham said.

Lucile Weight reports the high desert of California moist and this, together with an unusually mild season, indicates a better flower season than the earlier drouth period had led observers to expect. The lower levels of the High Desert were showing green growth at roadsides in the last week of January.

Bruce W. Black, park naturalist at Joshua Tree National Monument, says moisture is deep and he is hopeful that his area will see a profusion of bloom.

But rain or shine, the following plants can be expected to start blooming, or to be in full bloom, during March: desert lavender, desert alyssum, bladder-pod, chuperosa, chia, creosote, paintbrush, mallow, woolly-marigold and toward the end of the month, the Joshua tree, nolina and several species of cacti.

Jane Pinheiro of Quartz Hill in California's southwestern Mojave desert reports that the last time her area received the precipitation it did in late January was in 1948 which resulted in a bumper crop of royal blue desert lupine and Mojave lilies—as well as poppies, thistle sage, birds-eye gilia and pale sand verbena.

From the west-central Mojave Desert near Barstow Mary Beal sends word that gentle rains have refreshed the desert there and the wildflower possibilities are good, although no plants are yet in evidence.

Nearly two inches of rain was reported by Carl Whitefield, park supervisor at Borrego State Park, who also said a variety of green shoots have appeared in the desert soil in various

parts of the park. Ocotillo was coming into leaf during the first of February and some *Encelia farinosa* is in leaf with scattered specimens in bloom along Coyote Creek.

A. T. Bicknell, superintendent of Casa Grande National Monument at Coolidge, Arizona, writes that these plants should bloom during late March and early April: California poppy, brittle-bush, coulter mallow, evening primrose, bladder-pod, scorpion weed, fiddleneck and crownbeard.

Philip Welles of Lake Mead National Recreation Area, Boulder City, Nevada, says visitors can count on encelia and sunray along about the middle of March, and with a little more moisture, sundrops, evening primrose, desert dandelions and perhaps purple mat and a few pink gilia.

The January storms have left well-soaked ground in Southern California's Coachella Valley, and the best wildflower display in many years is predicted. This low desert area generally comes into bloom three to four weeks before the high desert areas and warm February days may bring a profusion of flowers in early March.

NAVAJOS TO USE OIL MONEY TO BETTER RESERVATION LIFE

Navajo Tribal Chairman Paul Jones announced plans for a program to better the daily lives of the Navajo Indian people. Over the Christmas holidays the tribe received \$33,000,00 in bonus payments for leases of oil lands and Jones said that for the first time in tribal history his people have sufficient money to undertake the major program.

Present plans call for improvement of water resources, the development of other resources on reservation lands, the establishment of industrial plants such as a new sawmill, building of communities, increasing scholarships for Navajo students, the building of additional administrative offices and a long-range land purchasing program.

Jones said now was the time to plan for utilization of coal, gas and electricity to bring the benefits of modern living into the homes of his people. Also suggested was a program to improve roads on the reservation.

The proposed program also entails a suggested \$5,000,000 trust fund that would provide an annual \$200,000 scholarship fund.

Jones reminded his people that the money required to better the conditions of those living on the reservation belongs not only to the Indians of this generation but to the children and the children not yet born.—*New Mexican*

Hard Rock Shorty of Death Valley



"Fishin' in Death Valley?" Hard Rock Shorty repeated the tourist's question. Then he pulled out his corn-cob pipe and settled back on the bench in front of the Inferno store as his memory traveled back over the 40 years he had lived in the Valley.

"Yep!" he said finally. "But that wuz a long time ago. We had good fishin' fer a little while back in '27. That wuz the year we had the big cloudburst up in the Panamints. Water come down outta the hills and filled that ol' lake bed over in Lost Mule valley plumb full.

"Dunno where the fish come from, but fer a time the pond

wuz full of 'em. Ketchin' got so good Ol' Pisgah Bill put up a sign in front o' his shack. 'FISHIN' TACKEL FER RENT'.

"Bill did purty good fer a couple o' months. Then business dropped off an' along late in August Bill decided to go over an' ketch some seafood fer hisself.

"Bill's seein' wuzn't very good an' he sat on a rock over there fer three days afore he discovered that the lake'd dried up an' he wuz fishin' in a mirage. But he had a little luck at that. Caught three lizards an' a sidewinder."

Pegleg's Mine--Fact or Fable?

By JAMES A. JASPER

IF THERE is one subject which quickens the pulse of the tenderfoot and desert old-timer alike, it is the story of a lost mine.

I have lived on the rim of the desert for over 40 years and have hiked over many miles of drifting sands chasing golden phantoms. Often my trail has crossed those of desert rats going to some place in the middle of nowhere—led there by the fairy tales of the Lost Pegleg Mine.

This man Pegleg—Thomas L. Smith—was a native of New Hampshire and a brother of Jedediah Strong Smith, the pioneer who blazed the trail from the Great Salt Lake Valley to the Pacific Ocean. Jedediah was a fearless adventurer who made two trips to California, the first in 1826 and the second in 1827. He was on his third trek when murdered by Comanches in 1831.

Jedediah's adventures were in no way connected with his erratic brother, Pegleg, who never spoke of his early New England days or made mention of his famous brother. So far as I have been able to learn, their trails never crossed after leaving the parental home.

First mention of Pegleg was made in 1825 when he and a man named Le Dukes made a trip to the Sevier River on a hunting and trapping expedition. They found hostile Indians on the Sevier, however, and shifted their base of operations to the Mojave Indian Reservation on the lower Colorado River. But their reception there was not pleasant either, so they moved on to the Moqui country where they spent some profitable years hunting and trapping before going to the Great Salt Lake Valley where Pegleg remained until 1836.

In that year, in the company of

others, Pegleg made a trip to California, hunting and trapping on the way. It was during this trip that he claimed he found and lost the rich gold mine—a day's journey west of their camp on the Colorado River—which bore his name and for which he is remembered today.

It is significant to recall that this year of supposed discovery—1836—was six years prior to the first recorded gold discovery made in California in 1842 by Francisco Lopez in a canyon north of Los Angeles, and 12 years before the gold discovery in northern California by William Marshall which touched off the big rush.

If Pegleg had been so unfortunate as to have found and lost a gold mine, evidently he was lucky in hunting and trapping, for he showed up in Los Angeles in 1839 with a valuable lot of fur.

After disposing of his pelts he went to Steamboat Hot Springs in Southern Utah where he established a permanent camp, and following the polygamous custom of the Mormons, took to wife five Indian women, gathered around him a bunch of their relations and settled down to a life of hunting, trapping and rustling stock off the big Mexican ranches. There was an abundance of feed on the open range, Pegleg was an expert rustler and soon he accumulated a sizeable herd of stock.

I knew two men who were intimately acquainted with old Pegleg, and they described him as a notorious "booze fighter" who when drunk was abusive and made life a veritable hell on earth for his wives. His skill with a rifle was known far and near by the Indians and his services were in great demand in their numerous tribal wars. He always threw in with the tribe that promised him to greatest percentage of the war loot.

On one such expedition he is said to have stopped a poison arrow with one of his legs, and knowing prompt action was necessary to save his life he exhibited a degree of nerve seldom if ever equalled by amputating the wounded leg with his belt knife and a meat saw with the help of an Indian woman. When the stump healed, he made himself a wooden leg and picked up the name, Pegleg.

When word of the gold discovery at Coloma in 1848 reached him, Pegleg joined the stampede and spent 18 months putting down prospect holes and alcohol—mostly alcohol. In 1851 he was mining on the middle fork of

For 121 years men have suffered and searched for Pegleg's lost mine on the Colorado Desert of California. But they seek in vain, believed the late James A. Jasper who once represented this area as a San Diego county supervisor prior to the formation of Imperial County. Pegleg was a dissipated horse thief who had no scruples about sending men to their death in search of non-existent treasure, Jasper maintains.

the American River in partnership with Silas Gaskill. The two men netted \$20,000 in a few months and when their claim petered out Pegleg returned to his Utah hangout and resumed his former occupations, adding illicit trafficking in stolen horses to the list.

For the customer who brought a pint of whiskey, it was said, Pegleg gave first pick of the horses he wanted out of the stolen herd; for a plug of tobacco or a bit of spare ammunition, one could take second pick.

In the late '50s, Pegleg organized a party to conduct an extensive search of the Colorado Desert for his lost mine. But when it reached the last known waterhole before entering the desert interior, the Indian carriers decamped during the night with all the supplies. Pegleg led the party to San Bernardino where it disbanded and gave up the search. It was whispered about that old Pegleg pulled a fast one on his partners by employing his wives' relatives as packers and then ordering them to make off with the winter's supply of grub.

In 1863 a man in San Francisco named McGuire claimed he had found the lost Pegleg mine and backed this up with rich quartz specimens. He was a man of means and not a grafter. With a party of five adventurers he left San Francisco for the mine. The group was last seen alive on the San Felipe Ranch as it headed into the desert. A few months later their bleaching bones were found half buried in the desert sands by a prospector.

In the '80s the Breedlove Party of San Diego, composed of three men, made a try for the lost Pegleg. They outfitted for a month's outing and failing to return at the appointed time a search party went after them. The rescue team found their lifeless remains a few miles north of the Mexican



border. The prospectors apparently had lost their way, lost their heads and wandered around in circles, discarding their clothing in frenzy before dying of heat and thirst in sight of the Yuha Spring where there was an abundance

of good water. That incident alone should have provided sufficient warning to those not familiar with the Colorado Desert not to enter it without a trusty guide who was familiar with its perils and knew its waterholes.

Desert Quiz:

This is the hour for the monthly test—to see how much progress you are making in your acquaintance with the Southwest. So get a pencil and relax in an easy chair. Don't make hard work of it for St. Peter doesn't put any black marks against you for the quiz questions you miss. Anything less than 12 correct answers is a tenderfoot score, 13 to 15 is good, 16 to 18 excellent, and if you get more than that you are very smart or very lucky. The answers are on page 35.

- 1—On a westbound trip across the Southwest desert, when you crossed the Colorado River at Topock you would be entering—Utah..... California..... Nevada..... Arizona.....
- 2—The Wasatch Mountains are visible from—Tucson, Arizona..... Las Vegas, Nevada..... Salt Lake City..... Albuquerque, New Mexico.....
- 3—Death Valley was given its name by—Death Valley Scotty..... Jedediah Smith..... Pacific Borax Company..... Members of the Bennett-Arcane party of '49ers.....
- 4—Next to English, the language most commonly spoken in the Southwest is—Spanish..... French..... Chinese..... Portuguese.....
- 5—John Hance was—Governor of New Mexico..... A guide at Grand Canyon..... Discoverer of Carlsbad Caverns..... A Mormon missionary.....
- 6—If you wanted to spend a night in Fred Harvey's La Fonda hotel you would go to—South Rim of Grand Canyon..... Ogden, Utah..... Palm Springs..... Santa Fe, New Mexico.....
- 7—Tuzigoot is the name of—A Ute Indian reservation in Utah..... A National Monument in Arizona..... A river that flows into the Great Salt Lake..... A weapon used by Indians for killing small game.....
- 8—First name of De Anza, the Spanish captain who led the first colony of white settlers into California was—Juan Bautista..... Juniper..... Francisco..... Marcos.....
- 9—The ingredient most common in the sand found on the floor of the desert is—Quartz..... Hematite..... Manganese..... Mica.....
- 10—Ed. Schiefflin was the name of the man credited with the discovery of—Gold at Goldfield..... Silver at Tombstone..... Potash at Trona..... Casa Grande Indian ruins.....
- 11—Mesa Verde National Park is best known for its—Geysers..... Waterfalls..... Caves..... Indian ruins.....
- 12—The Navajo Indian reservation extends into all but one of the following states—Arizona..... Nevada..... New Mexico..... Utah.....
- 13—Javelina is the name commonly used in the Southwest for—A species of wild hog found in Southern Arizona..... A spear-like weapon used by the Cocopah Indians..... Birds that nest in fissures in the rocks..... Members of the lizard family.....
- 14—The astronomical name of the North Star is—Venus..... Jupiter..... Polaris..... Mars.....
- 15—The famous Mormon Battalion of 1846 was organized to—Aid Gen. Kearny in the conquest of California..... Help colonize Utah..... Open a new Northwest trail..... Guard the Santa Fe trail.....
- 16—Indians who call themselves "Dine" meaning "The People" are—Hopis..... Yumas..... Navajos..... Apaches.....
- 17—Tallest tree native of the Southern California desert is — Joshua Tree..... Washington palm..... Palo Verde..... Mesquite.....
- 18—Indians who come to the Tonalea Trading post generally are — Paiutes..... Apaches..... Hualpais..... Navajos.....
- 19—Jojoba is the name of a shrub which grows only—At Upper Sonoran Zone elevations..... On the floor of the dry lakes..... Around the alkali seeps known as cienegas..... In canyons where there is running water.....
- 20—Canyon de Chelly National Monument is in — Arizona..... Utah..... New Mexico..... Nevada.....

But, once feel the pull of the desert and a man always returns. A prominent Riverside resident named Couver became interested in the story of the lost Pegleg and made numerous trips into the desert in search of this treasure. Like many others he made one trip too many and in 1886 never returned. He was last seen in Clark Valley. A substantial reward was offered for the recovery of his remains and numerous search parties combed the desert sands far and near but no trace of Couver was ever found.

The tales of tragedy and toil connected with this mine go on and on, and I am convinced that Pegleg's story is a delusion and a myth, deliberately concocted by this man for the purpose of receiving free drinks in the saloons where a good lost mine tale afforded diversion and was worth a treat. He played the game without pretext or care for consequences, sending many a credulous prospector to his doom.

Pegleg Smith entered the historic spotlight in a haze of mystery and made his exit in the same manner. When on his death bed he gathered his wives around him and told them that all arrangements for the disposition of his body were made. When the end came, three strangers took his body away and no one, not even the Indian wives, knew who the men were or what they did with Pegleg's remains.

SCIENTISTS CLAIM GAINS IN SALT WATER CONVERSION

Progress in using the sun's energy to convert salt water to fresh water is claimed by the Interior Department.

Research conducted by the department's office of saline water since 1953 shows that use of solar heat to distill salt water has promise of economical large-scale fresh water production. Interior Secretary Fred A. Seaton said this is particularly true in the Southwest where solar intensities are high, provided simple stills can be made cheaply.

David S. Jenkins, director of the saline water office, said multiple-effect distillation is one way of increasing output. In this method, heat absorbed in evaporation is recaptured in condensation and made to evaporate additional water.

Dr. Maria Telkes of New York University, working under contract with the department, has developed a 10-effect solar still which is capable of producing about six times as much fresh water as a single still.

The DuPont Co., under a contract recently signed with the department, will provide plastic materials for construction of prototype stills for experimental tests on salt water conversion. —Salt Lake Tribune



Many wild horses and wild burros once roamed the hills and flats near Teel's Marsh in the background. Only a few of the little wild jacks remain today.

Ghost Town Prospector...

Ed Smith was a successful rancher—until he began investing in wildcat mining stocks. Like most humans, he learned the hard way. After he had lost his ranch and everything else he owned, he decided to seek a new fortune where he lost the old one—and he became a prospector. At 87, he's been at it 41 years, and he admits he hasn't recovered all he lost—but he has found a healthful and satisfying way of life on the Nevada desert.

By NELL MURBARGER
Photographs by the author
Map by Norton Allen

7WICE BEFORE I had made the 75-mile drive from Tonopah to Marietta, Nevada, in an effort to locate Ed Smith. Ed, however, is about as elusive as a drop of quicksilver in a goldpan. He's here, there and everywhere—all at once!

With mining claims scattered all over the Excelsior Mountains, income property at Las Vegas and various other irons in his busy fire, he hasn't much time to sit around waiting for chance visitors. Naturally, there are many other folks who own mines in the Excelsiors and are easy to locate; but not many live in a ghost town 45 miles from the nearest postoffice or telephone, and practically none is 87 years old.

Such being the case, I'd have driven to Marietta a dozen times, if necessary, to have located Ed—but I was lucky! My third trip to that former borax camp found an old truck parked in the yard of a cabin I knew to be Ed's, and from under that vehicle protruded a brace of men's feet and two short lengths of trouser legs. Soon as I cut the ignition and my car's motor died, those feet and legs began wiggling backward, to be followed, in turn, by

a man's midsection, a pair of grease-smudged hands and a grease and perspiration-smudged face.

Unfolding his long thin length, like a carpenter's rule, the desert man rose to his feet and came forward to meet me.

Introducing myself, I mentioned that I had made two previous trips to Marietta without finding him at home.

"That so?" commented Ed Smith, dryly. "Well, you wouldn't have found me this time, either, except I had to lay off work to make some repairs on that cussed old truck. I oughta be at the mine. But, now that you've got me cornered," he grinned crookedly, "what was it you wanted?"

When I explained that Jack and Grace Callahan of the neighboring ghost town of Columbus had said he was known as the "Mayor of Marietta," and that he could tell me about that place and Teel's Marsh, scene of an early-day borax development, the old man shook his head, almost crossly, I thought.

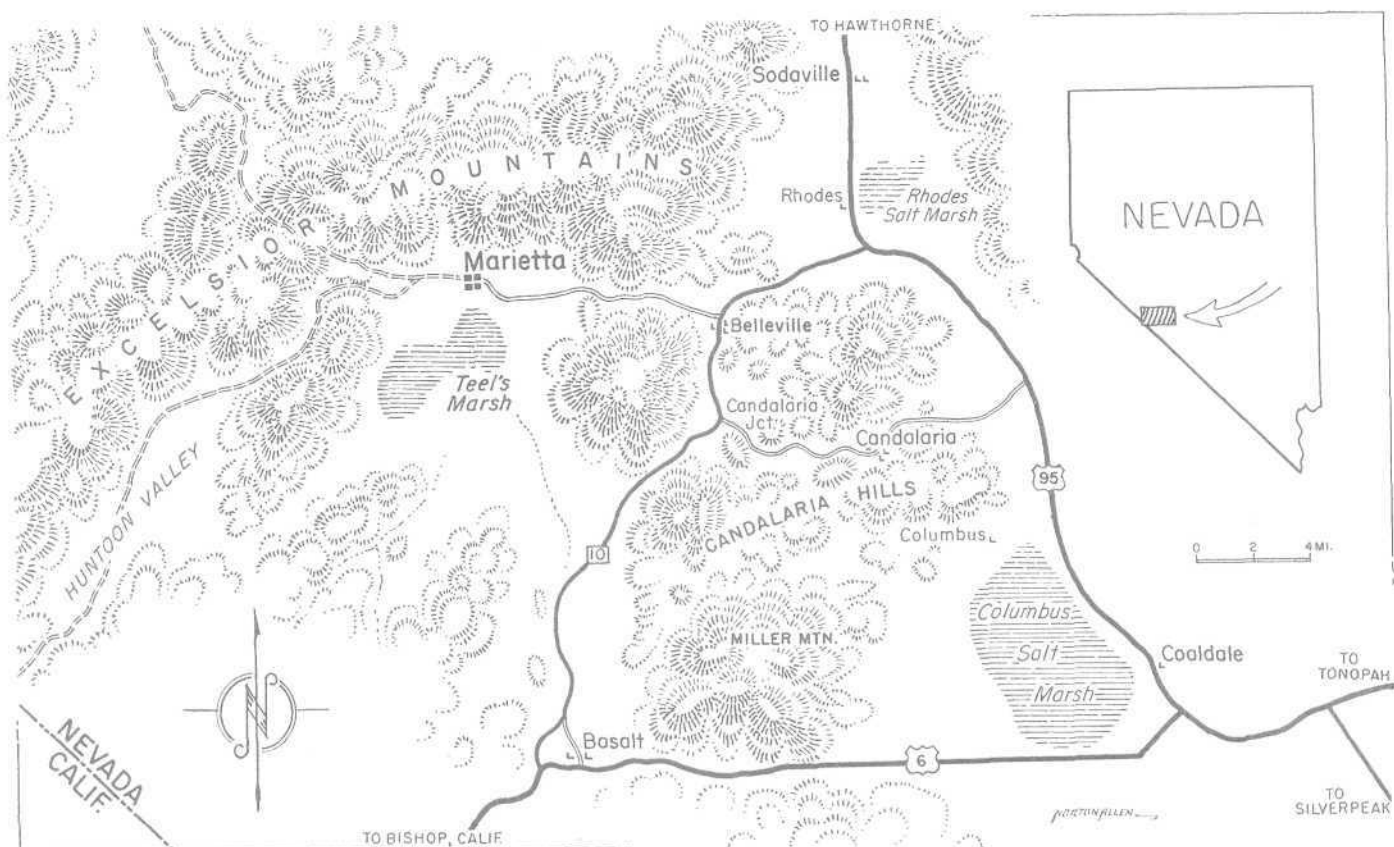
"Oh, no," he said, "there's not much I can tell you about Marietta. I've lived here 37 years, it's true—but the camp was a ghost town long before I

arrived. However, come on in the cabin," he invited. "We'll find something to talk about . . ."

Ed Smith's home consisted of a single room, ingeniously fabricated

Ed Smith, 87-year-old miner who has lived in Marietta since 1919.





from logs, railroad ties, adobe, flattened coal oil cans, corrugated sheeting and a few pine boards. Although the place was quite adequate to meet the needs of a bachelor miner, Ed insisted on apologizing for its appearance.

"I don't usually live in a dump like this, but my other house, up nearer my gold mine, recently was destroyed by fire," he explained. "All I saved was a little bedding and a few clothes."

"Here —" he offered, "take this chair by the door. Maybe you'll catch a little breeze, now and then . . ."

Ed Smith was born in Alabama during the chaotic period of reconstruction that followed the Civil War.

Throughout the troubled years when he was growing to manhood, he could visualize much more opportunity for advancement in the Far West of Buffalo Bill, Jim Bridger and Wyatt Earp — and in 1890, at the age of 21, he left Alabama for the frontier. Establishing himself near Fresno, California, the young Southerner eventually acquired a fine ranch on which he farmed 160 acres of grain and 100 acres of table grapes.

"I had a good house and outbuilding, my land was fertile, and I liked farming," said Ed. "But I couldn't let well enough alone . . ."

"Nevada was having the greatest mining booms of her history! Close on the heels of Tonopah came Goldfield, Rhyolite and Rawhide — one great stampede after another! Invest-

ors were making millions without even turning a hand, and I got a wild notion I had to cut myself in on that free-for-all jackpot. Once I made my wants known, of course, it wasn't long before some mining gentlemen came to oblige me. I repeatedly invested in the stock they offered, and sat back to wait for the profits, which didn't come.

"In a final desperate effort to hold my stock—just in case it might prove to be all the company claimed — I mortgaged my California ranch. That was the end. When the mine still failed to produce anything more substantial than promises, my creditors foreclosed and, in 1915, I walked off the place with scarcely more than the clothes on my back.

"I was 46 years old," reflected Ed Smith. "I had worked hard all my life. All I knew was farming. But I had lost my money through mining and something seemed to be driving me to find it where I had lost it. Possibly I felt the only way to regain my self-respect and self-confidence was to beat the game that had beaten me, or maybe I had been bitten by the mining bug. I don't know. In either case, I quit farming forever and headed for the desert."

Broke and a little bewildered, Ed Smith passed the winter of 1915-16 in an abandoned dugout near Bradbury Well in the southern part of Death Valley, and the following spring saw him tramping restlessly over Nevada.

The trail was a long and weary one. Day after day, month after month, his prospecting pick delved into the hidden secrets of the rocky ridges, the sandy washes, the hills, the mountains — and night after night found his lonely campfire burning amid the crumbling ruins of former boomcamps which time had changed to ghost towns.

In the course of his quest for elusive treasure, the erstwhile grape rancher one day stumbled upon the old borax-mining town of Marietta on the north shore of Teel's Marsh. Though the camp, even then, was deserted, there was something about the place that appealed to him and two years later—in 1919, when he was 50 years of age—Ed Smith returned to establish his permanent home.

"And did you eventually 'find it where you'd lost it?'" I asked, a trifle injudiciously, perhaps. Ed Smith grinned.

"I haven't found all of it," he admitted. "But I'm still working at it! And I'm not even one little bit sorry that things happened as they did — losing the ranch, I mean. I've had a good life, a wonderful life! During the 41 years I've been prospecting, I've discovered more mines than you can shake a stick at! Gold, silver, lead, copper, uranium—you name it, I've found it! Some I've developed and worked; others, I've sold outright. I haven't become rich, but I've always been self-supporting. I still have my health and peace of mind—and I still

own some good mining properties, too! Come outside a moment!" the 87-year-oldster jumped nimbly to his feet. "I can show you a couple of my mines from here.

"My best silver mine, the Silver Belle, lays just over that ridge—" his pointing finger leaped across a dozen miles of rough country to the skyline of the dry Excelsior range whose rocky summits, pushing upward to a height of nearly 9000 feet, rim Marietta's world on the west and north. "And up yonder—" this time he indicated a mine dump visible on the mountainside north of his cabin, "—that's one of my gold mines. Good mine, too! Plenty of ore in it that'll go \$12.50 to the ton—but who can pay miners \$16 a day to take out \$12.50 ore, especially when it's necessary to truck it several hundred miles to a mill? Only way such ore can be handled at a profit is to mill it here and ship the concentrates—but you can't run a mill without water.

"I've got a good lead mine, too," continued Ed Smith, "and 11 uranium claims . . ."

I asked if there had been much uranium excitement around Marietta.

"Oh, yes!" grinned the old miner. "Scads of excitement — but no shipping! Last summer every hill in these parts was swarming with prospectors looking for uranium. They all staked claims—and now, they're all out looking for buyers!"

All that remains of the old cemetery at Marietta are a few fallen pickets of the fence that once enclosed it.



Road from Belleville to Marietta, looking northwestward toward the Excelsior Mountains. White flat in middle distance is Teel's Marsh.

Scarcely more than a stone's throw south of Ed's cabin, the thin brush of the desert gives way to a glaring flat 6000 acres in extent. Unsoftened by blade or leaf, this is a dead white void where every passing breeze awakens a cloud of dust; where heat waves ripple crookedly, mirages appear and vanish like images on a screen, and sinuous dust devils wheel and caper, climb and die.

"So that's Teel's Marsh," I mused.

"Yep. That's where old Borax Smith got his start."

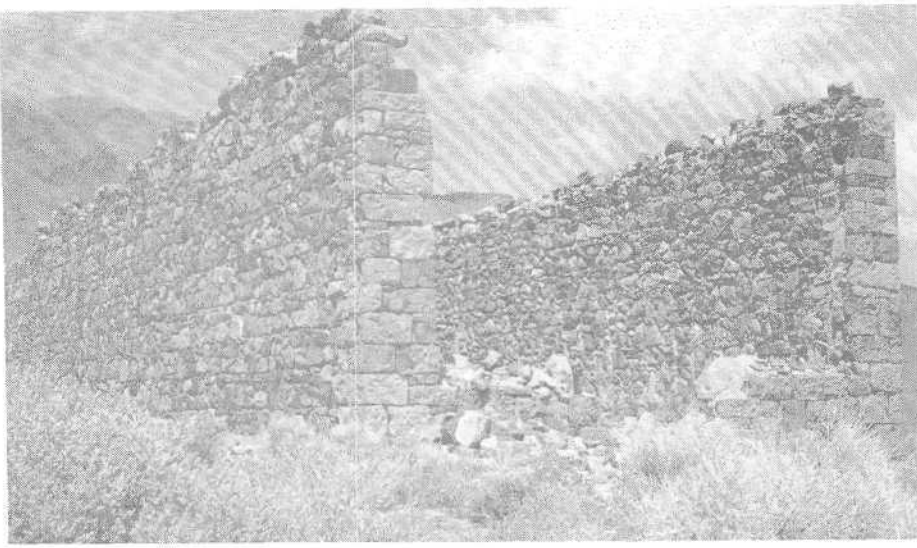
I looked up in surprise. "I thought

Borax Smith got his start at Columbus."

"No." Ed shook his head. "Smith's first borax property was right here at Teel's Marsh."

When Francis Marion Smith — no relation to my new friend, Ed Smith — arrived at Columbus in Esmeralda County, Nevada, in the summer of 1872, he found the mining and refining of cottonball borax in full swing there, said Ed. Under the system then employed, the white borax crust was collected from the surface of the marsh and shoveled into huge iron tanks to be boiled, separated and crystallized. Since a great quantity of fuel was needed to keep these tanks boiling, and fuel was a scarce article in that desert area, Francis Smith saw a chance to make a stake for himself. Locating a wood ranch in the hills 10 miles northwest of Columbus Marsh, he built a small cabin, hired a couple of men to help him and began supplying boiler fuel to the primitive refinery at Columbus. One day, in that same summer, while scouting about for new sources of wood, Smith came upon another white flat—Teel's Marsh—where the encrusted surface had much the same appearance as that of the flat at Columbus. Gathering a few samples of the material, Smith took them to an assayer at Columbus who subsequently informed him that he had brought in specimens of the richest cottonball borax ever known!

Smith hastened back to Teel's Marsh where he located the entire flat under the Saline Laws of the State of Nevada which allowed 160 acres to each claim. Almost before the location notices were filed, however, the state law was amended to place borax in the mineral category, thereby limiting claims to 20



Roofless walls of the large general store building at Marietta formerly owned by Francis Marion "Borax" Smith.

acres each. This meant that all the ground Smith had staked out at Teel's Marsh had to be relocated—thereby giving potential claim jumpers a marvelous chance to profit. Some of these opportunists were run off by Francis Smith at gun point, others he disposed through court action or bought out. In time he came to own the entire area of Teel's Marsh, where borax production got under way in the fall of 1872.

After operating for a number of years under the firm name, "Teel's Marsh Borax Company," Francis Smith found he had accumulated sufficient capital to purchase 16,000 acres of borax lands at Columbus, where he formed the Pacific Borax Salt and Soda company. The newly acquired property together with his original holdings at Teel's Marsh made him the largest producer of borax in the West. Both plants continued in active operation until the 1880s, when richer deposits of borax—in the form of colemanite—were discovered in Death Valley, said Ed.

Francis Marion Smith—by this time known throughout the nation as Borax Smith—continued on from his first properties at Teel's Marsh and Columbus to the ownership of other borax deposits and, eventually, to organization of the Pacific Coast Borax company and ownership of railroads and other far-flung business interests.

"I guess you know that he had a big general store here at Marietta?" asked Ed. "Would you like to see it?"

We drove down the street a short distance to what Ed termed "the main business section of town," and here he showed me the roofless walls of a large stone building, still standing four-square and plumb.

"That's it!" said my guide. "All that's left of it. I understand it was a right busy place when Smith was running it back in the '70s . . .

"That adobe ruin over yonder," he continued, "is the old Marietta saloon. There used to be a fancy picture on one of the inside walls. Maybe it's still there."

Floundering over heaps of crumbled adobe and broken lengths of splintered and heat-twisted boards, we made our way into what had been the interior of the building but was now completely exposed to wind and weather.

"There she is!" said Ed, nodding toward the west wall of the building where remaining remnants of plaster revealed the painted figure of a woman clad in red, white and blue, with a golden crown on her head. She was standing beside a painted vine decked in blooms of impossible hugeness, and over her hung a painted banner bearing the single word, "Marietta."

"That sign—" chuckled Ed. "You might call it 'The Last Word in Marietta.'"

We wandered back up the street, past other stone and adobe ruins which had, in their day, housed restaurants, blacksmith shops and all the other establishments that men of the frontier deemed necessary to their well-being and pleasure.

After the breathless heat of midday, a cooling breeze had sprung up in the southwest and the brassy desert sun had dropped far enough so that Ed's cabin cast a narrow rectangle of welcome shade. Seating ourselves on the ground in this little shade-island, we leaned back against the rough walls. I asked Ed about his Las Vegas property and how he had happened to buy it.

"Well," he hesitated. "It's sort of a long story. You see," he continued, "I've always figured that in this land of wonderful opportunities, it's a disgrace for a man to die broke. I've always wanted to make a high mark in the world—to amount to something,

even if only for a little while. Like I told you, I have some good mining properties. They're worth every bit of \$150,000 to any man who can develop and work them. But my time's running out! I don't know whether I'll be able to sell them in the few years left to me, and I want to leave some money behind when I go.

"It isn't so much that I want to leave it to kinfolk—all the kin I have are nieces and nephews in Alabama, and they're pretty well fixed—but near the place where I was born there's a home for crippled children. They're doing wonderful work, but they're always short of funds. I want to leave them a fine big legacy—a lot of money so they won't have to scrimp and save, and can buy all the things they need for awhile, at least, and maybe take care of a lot more crippled children. It must be terrible," he said, "to be crippled . . .

"About 10 years ago I got to thinking about all this and it seemed to me the best way I could be sure of helping those kids was to get hold of some real estate in a good prosperous town where it was certain to increase in value as time went on.

"I decided on Las Vegas. I'd been doing pretty well mining, and had saved enough money to buy five residential lots and a five-acre tract in Vegas Heights, and I built a modern house on one of the parcels. That was 10 years ago. Since then, land prices at Las Vegas have increased by leaps and bounds and still are climbing. I think I made a good investment. It's going to be valuable property some day, a right nice legacy!"

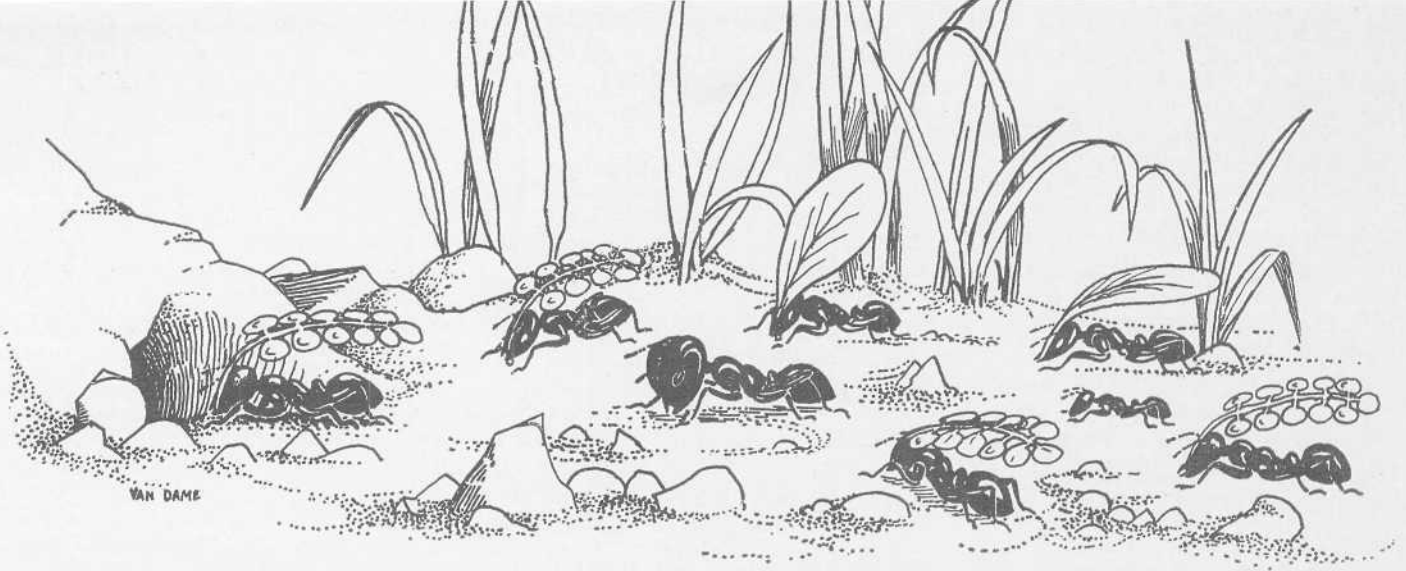
For several moments neither of us spoke. Ed Smith's gnarled forefinger traced some circles, cross-lines and triangles in the dust, and he looked out across the dry sweep of the desert.

"When I was a younger man," he went on, "I always figured I'd like to retire for a few years before the end. Maybe go to some city, get some good duds and take life easy for awhile. But now, I don't know."

"Huh-uh!" I said. "You wouldn't like it—not any more than I would!"

The 87-year-old Mayor of Marietta nodded thoughtfully. "I don't suppose so." A little nest of crinkles appeared around each of those keen old eyes, and a smile stole across that weathered face. "After I'd laid around town a couple of weeks, I probably would be as mean and cantankerous as an old she-wildcat with cubs! I'd have to come back to Marietta to sweat the meanness out of me, and once I was here, I'd just naturally start looking for another mine!"

And I'm sure that's how it would be.



ON DESERT TRAILS WITH A NATURALIST -- XXXV

The Busy World of Desert Ants

The observation and close study of ants long has proved a fascinating endeavor to both the scientist and layman—and for good reason. The high degree of social achievement, cooperative living and fulfillment of duty by these lowly insects often put to shame man's feeble efforts along these lines.

By EDMUND C. JAEGER, D.Sc.
Curator of Plants, Riverside Municipal Museum
Drawing by Morris Van Dame

RECENTLY MY good camp companion, Stanley Phair, and I undertook to compile a record of the miles I have covered on foot, burro-back, and by automobile during the 50 years I have been following the desert trails. We came up with a figure of 485,000—and what good miles they were. I am glad to report that my enthusiasm for the open road and the by-paths of the arid land has not diminished with the passing years.

In December, when the Christmas holiday came, I packed my long-used camp equipment in the station wagon and was off with two companions on a 1600-mile journey into the small-tree desert of northwestern Sonora, Mexico.

The fourth night's camp was in a little opening among the Organ Pipe cactus, brilliantly green-barked Sonora Palo Verde, Ironwood and Tree Ocotillo. In scouting around for easy-to-break deadwood for our campfire one of the lads came upon living lines of those extraordinary ants called leaf-bearers.

Here before us was a path three inches wide thronged with thousands of third-inch long reddish ants earnestly crawling back and forth. Most of those going toward the nest were carrying banners over their backs, the

elongate leaves of the Sonora Palo Verde. Others carried edgewise leaflets of an Acacia. Those traveling the outward journey, of course, carried nothing.

We traced the insects back to the opening of the formicary or nest and found them entering a finger-size hole two feet up on the side of an arroyo bank, a wisely chosen location which protected them against flood waters. Here they were joined by another line of workers coming from another direction and carrying exclusively the dry leaflets of Acacia.

We retraced the first ant column back to the wide spreading Palo Verde. It was a source of 50 yards away. Just why this distant tree was selected must be left to conjecture for there were other Palo Verdes which appeared just as green much nearer the ant nest. The tiny workers were crawling up the tree trunk to the topmost branchlets to nip off with their strong jaws the bigger-than-themselves leaves.

Noticeable among these leaf carriers were a number of giant-headed chocolate colored fellows—really the most ponderous-headed ants I've ever seen. Very deliberate movers they were, doubtlessly assigned to patrol duty and spaced about every 10 feet along the

line of living workers. Their disproportionately robust heads and elongate jaws indicated that they were soldiers. Not one of them was carrying a leaf. In the same line were a few much smaller ants assigned an undetermined role. Empty-jawed, they too moved back and forth among their burden-bearing sisters—I say sisters because all the workers of an ant colony are specialized modified females.

That these ants sleep is an undoubted fact for as soon as it was dark not one was to be seen, the last of the leaf-bearing workers having entered the nest soon after sunset; nor did they appear and reform their lines until about a half hour after sunrise.

I took leaves from several of the returning workers and for only a moment did they seem puzzled. Almost immediately they turned and in obedience to a long ingrained instinct went right back along the line to the chosen tree where they plucked new leaves.

Judging from the number of individuals in the populous ant colony and the amount of leaf-material, green and dried, these insects were taking into their store house, I assumed that their subterranean chambers were large and that the connecting galleries were many. They probably honeycombed the soil for considerable depths.

Down beneath dwell specialized workers which never appear above ground and whose job it is to cut up the leaves and pack them away in the nest gardens. These pulverized leaves furnish the damp material upon which the ants plant and cultivate special ambrosia fungi which furnish their food. These they guard and tend in

a most skillful manner, keeping them free from mould and bacteria. The ants cause them to produce modified forms of growth or "white masses" by an agglomeration of fungal threads or mycelia. That these special food masses are due to a very special cultivation is proven by the fact that when taken from the ants' nest and cultivated by human experimenters the fungi produce only ordinary conidia or fruiting bodies instead of ant food masses.

I have seen other kinds of leaf-carrying fungus-growing ants in the warmer southern deserts of Arizona, California and northern Mexico. Some of these transport flowers to the nest as well as leaves. Most appealing is the sight of these ants carrying the small

bearded ant) with black head and thorax and reddish abdomen. They have specialized combs on their forelegs which they use to remove dust and sand from their bodies. To clean the combs they pass them through the strange beards of long hairs on the underside of the head.

On the beautiful grassland-arboreal deserts of mid-Sonora is found a small Harvester Ant which collects great quantities of certain grass seeds. These are taken underground where the chaff is removed. The straw-colored chaff is brought up and deposited in unusually large and attractive crater-like mounds about the nest entrance. Sometimes the accumulations may contain several bushels of seed husks, and are

only evidence of their dwelling is a small hole in the ground with only slight accumulations of excavated sand. Several inches below is the squat oval chambers where certain individuals hang from the roof and are fed nectar or honey until their bodies become enormously distended and serve as living honey jars. Later when the need arises they disgorge this sweet food.

Among the most curious things I see while on my desert wanderings are large collections of disjointed or severed body parts of shiny black ants. These always are found close to the openings of abandoned ant nests. Sometimes the accumulations consist of whole teacupfuls of ant heads or of heads and torsos, seldom of whole bodies. It is the last evidence of dreadful carnage accompanying fierce raids and battles where warriors and workers of the attacked ant colony are slain and the pupa carried off by ferocious armies of formicine robber ants, to be hatched and reared as workers and fighters for new masters in new homes of captivity.

Some day I will see one of these battles between ants. Highly interesting and instructive it will be to observe the tactics of offence on the part of the aggressors and to witness the brave fight to the end by the unfortunate victims whose heads and mutilated bodies are to be the final evidence of their valiant struggle for survival.

Next time you go to the desert try out the sport of ant watching. If necessary get down on your hands and knees and observe the intelligent insects with a magnifying glass as well as with the naked eye and you will be amazed at what new pleasures will be yours. Maybe you will be convinced as was the great American student of ants, Dr. William Morton Wheeler, that next to the human brain the brain of an ant must be among the most marvelous bits of material in the universe.

Some creatures we learn about, but ants we can learn from—lessons of diligence, efficiency, pertinacity, sacrifice, loyalty, devotion to the good of the group and the great value of teamwork. Indeed it is difficult to avoid the conclusion that most ants have acquired the art of living together more perfectly than have *homo sapiens*.

Perhaps like myself you have wondered what the origin of the word ant is. The philologists tell us that it is derived from two Teutonic word elements, the privative *a* and *maitan*, to cut or bite, i.e. the insect is "the biter-off." The Old English word for ant was *aemete*. This became altered to *amete* and finally to *ant*. The word *emmet* for ant still is provincially used, I am told, in some parts of England.



Craters of Harvester Ants found in a sandy wash near the Salton Sea in Southern California. Photograph by the author.

elongate trumpet-shaped flowers of *Lycium*, the thornbush. One could easily think of them as a host of miniature bandmen carrying their unusual instruments to rehearsal.

Perhaps ants are not more plentiful on deserts than elsewhere but merely more noticeable because of the usual sparseness of vegetational ground cover. Unusually conspicuous in sandy washes are the crater-like hills of certain Harvester ants. Their sand and gravel mounds often are four or even up to eight inches high and one to two feet across and with encircling spaces cleared of all vegetation. Often we find such craters in close groups, each the center of activity of a particular ant colony. From each run long lines of black-bodied workers going to and returning from the forage fields. The big Bearded Harvesters belong to the genus *Pogonomyrmex* (Greek for

unusually conspicuous because several feet around them the earth is bare of all vegetation. These ants, like the leaf-carriers, are day workers only and during sunny hours they are seen spreading over the land in every direction. However, guards with heavy jaws stay on duty during the night just within the formicary entrance. It always is interesting to visit these nests at night with a flashlight and then place a straw within the nest entrance to see the alert guards quickly move up and seize the offending straw in their jaws.

There is a medium-sized amber-colored desert-dwelling ant I always can depend upon being active at night. It has a very special appetite for syrups, jellies and spilled sugar. It is known as the Honey-pot ant and will quickly discover any supplies of its favorite foods, even crawling up on tables or occasionally into automobiles. The

Introducing a new series for Desert Magazine readers—

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Inscription Rock

By JOSEF and JOYCE MUENCH

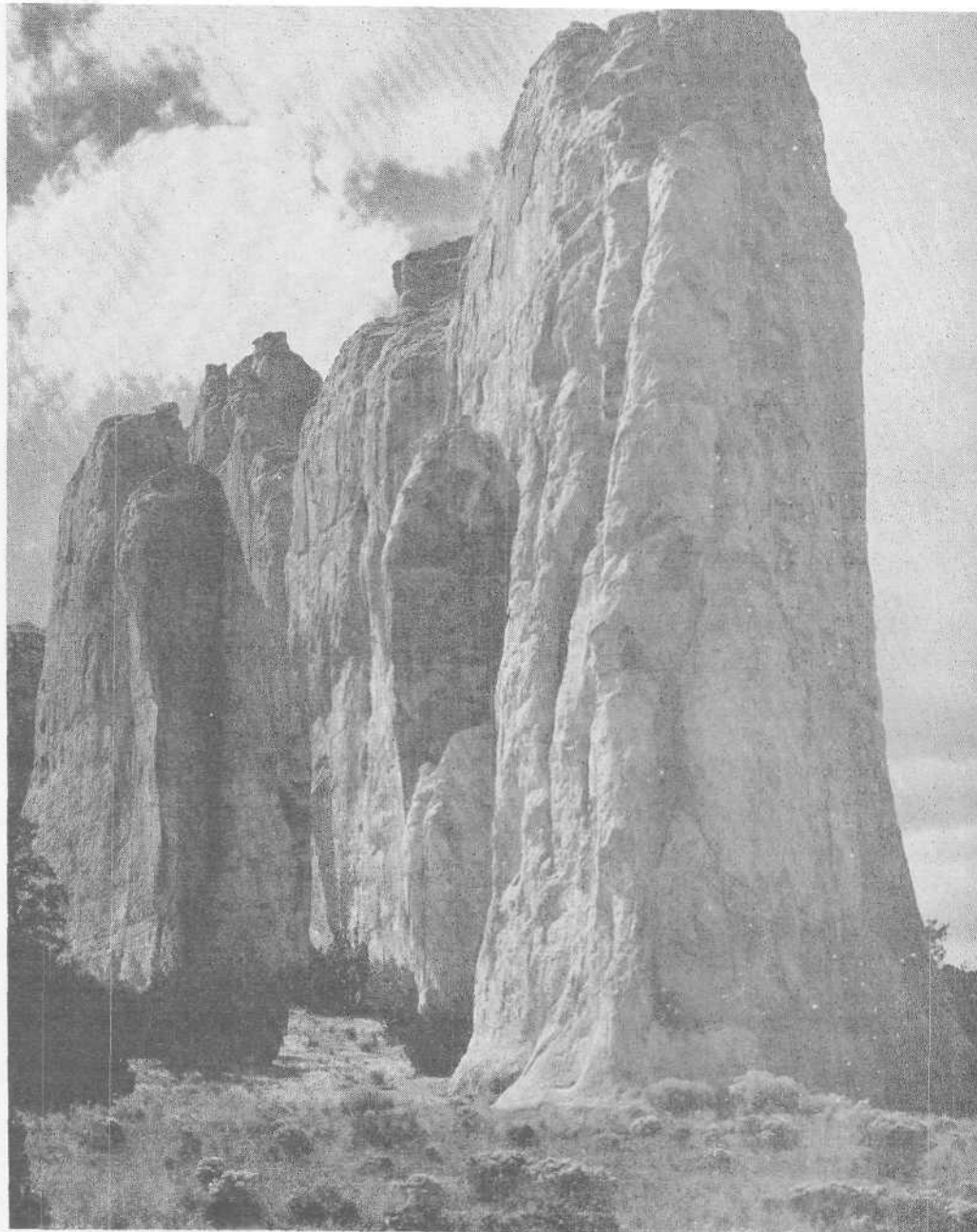
Along the legendary road of the Spanish Conquistadores to the elusive "Seven Cities of Cibola" is the "autograph album"—first signed by white men in 1605 and now protected as El Morro National Monument in New Mexico. The road led not to the riches they dreamed, but to battles and wounds for soldiers and martyr-death for some of the Padres. The long story, told in fragments on sandstone walls sheltering a precious water supply, is without equal in the colorful history of our country.

In quaint old Spanish language, chiseled out perhaps with sword or dagger by some literate under-clerk, is the oldest inscription. *Passed by here the Adelantado Don Juan de Onate, from the discovery of the Sea of the South, the 16th of April of 1605.*

Names of other pathfinders, Don Francisco Manuel de Silva Nieto, General de Vargas, the Bishop of Durango, Don Feliz Martinez are still decipherable along with later pioneers, rolling west after the Spanish flood had subsided.

Top photograph—El Morro Rock. On the lower part of this sandstone cliff is the remarkable record of pre-historic Indians, Spaniards and pioneer Americans.

Bottom photograph — Inscription Rock. Visitors examine some of the hundreds of names carved on this great rock face.



LIFE ON THE DESERT

Cattle Drive to Winslow . . .

A girl of 13 helping her father drive a herd of wild Indian cattle to the railhead . . . a desert storm . . . stampede! From this memory-filled wild night the author adds another chapter to the stirring story of pioneer Arizona . . .

By BILLIE YOST

WHEN I WAS a girl of 13 I helped my father drive a hundred head of wild Navajo cattle to market.

We lived at Red Lake, an isolated trading post in the heart of Navajoland 45 miles northwest of Winslow, Arizona. This is a country of much sand, no shade and unbroken horizons.

Mother often said I was my father's shadow. I wanted to go everywhere he did and, as I was a tomboy, he usually let me accompany him to places where he would not consider taking mother or my sister, Esther.

The September I was 13 he asked if I would like to help drive the cattle we had bought from the Navajos to Winslow for shipping. Mother was horrified, but I was so thrilled with the prospect of taking part in a cattle drive—and father so sure I could do it—she finally consented.

Father, my older brother, Walter, our Indian helper, Little Gambler, and I were to make the trip. Mother, my other brother, Roy, and Esther were to run the trading post during our absence.

Herding cattle is an exciting and dramatic experience. Always there is tension because the slightest disturbance can cause a stampede and no western story writer has ever exaggerated the dread a cowboy feels at the call, "They're stampeding!"

A milling mass of frightened cows, bellowing, snorting, trampling each other to death and running off precious pounds of weight, is a fierce and frightening sight. Fortunes have been lost and men killed because a scrap of paper has blown across the path of a moving herd.

I was on a tough job. The sun beat down unmercifully. Father placed me at the rear of the herd to prod an old bull who insisted on lagging behind. Also I had to tend the pack horse that carried our grub and bedding. I was in the center of our personally stirred-up dust storm and choked and gagged until I thought I would die. Father saw this and tied his big blue bandana across the lower part of my face bandit-style. This helped with the dust but increased the stifling heat.

We figured on three days for the

drive. Fifteen miles a day is enough to push animals if you want them to arrive in good condition. The first night out everything went fine. The cattle were rounded up, accounted for and they seemed neither scared nor overly tired. Calves nuzzled their mothers and my big lazy bull settled down for a good night's rest.

The second day also was without trouble. Even I was becoming hardened to the job. Long hours in the saddle did not tire me and after the cattle were settled we sat around the campfire and ate our supper of dutch oven biscuits, bacon, fried potatoes and coffee.

Father was beginning to relax from the strain of getting his beef to market. The end was in sight. By the next night he would have a nice roll to put in the bank. The cattle represented his profit for a year of hard work, for the trading post barely paid our living expenses and its own overhead.

After supper it was my turn to ride night herd with father. As I mounted I noticed thunder clouds boiling up over the San Francisco peaks and distant lightning flashes to the west.

Suddenly an extremely violent electrical storm broke. The lightning flashes lighted up the countryside and the air smelled of burned sulphur. Static electricity danced off the cattle's horns and down their backs. I was frightened. Walter and Little Gambler rushed into their saddles and soon were circling the herd with us.

Four people to handle a hundred frightened cattle seemed like poor odds to me. The storm grew in intensity as it moved over us. When the lightning flashed we could see the cattle moving about restlessly. Suddenly the whole heavens split wide open with thunderous crashes, rain gushed from the clouds and all hell broke loose.

The nervous cattle sprang up and charged pell-mell in a panicky run, headed for destruction. I raced beside father in a vain effort to control the terror-stricken animals and I heard the full tide of his fury burst forth. It probably was the last time an Arizona cattleman has cursed rain in this parched land.

He shouted a warning to me, but his voice was lost as the ground shook with the thunder of pounding hooves. There was only one thought in my mind: "Save the cattle!" I forgot completely my personal danger and discomfort. I only knew that it was up to father and me to check that running mass of beef. Walter and Little Gambler were lost somewhere in the black night.

"You've got to stop them! You must save them!" kept pounding in my brain. In sudden horror I recalled father having said that he had borrowed the money to buy this bunch. "Oh, dear God!" I prayed in teenage fervor, "Help us stop them!"

It seemed hours passed before the faster animals forged ahead and the herd became less packed. Father then closed in on the lead, and gradually crowded them from their hell-bent course. He swung them into a circle and the herd started milling. Soon Walter and Little Gambler rode into view. We were safe and the stampede was over!

At daybreak we found the cattle split into small bunches that were scattered over a wide area. It took three long days of hard riding to round them up. A few had been killed and others missing, but the loss was not great and father was audibly relieved when he exclaimed, "that darned banker won't get his pound of flesh this time!"

As we started the final drive, my old bull, the steers, cows and calves moved along restlessly. It was a noisy, unhappy herd with cows bellowing for their lost calves and calves wailing for their lost mothers. I felt a great relief when we arrived at the Winslow stockyards.

We corralled the cattle and then collapsed into our beds. But, at dawn we were up to assist with the loading of our cows into the stock cars and then our job was over.

Our return trip was uneventful and when we arrived at Red Lake we were rested and in good spirits.

That evening, when we sat down to supper at our oil cloth covered table, mother sent a gentle commanding glance to all of us, bowed her head and in her clear sweet voice asked a special blessing. She thanked the Lord for His care and His goodness in helping us get the cattle safely through to Winslow.

HOME ON THE DESERT

Exotic Blooms in the Spring Garden ...

The coming of spring brings fresh—and different—blossoms to the desert garden as plants once thought to be unsuitable for the desert are now grown here—and with startling success. Camellias, gardenias, hibiscus, magnolias as well as the familiar pomegranate, lantana and bird-of-paradise combine in the desert garden to produce what is truly a fantasy of color.

By RUTH REYNOLDS

MARCH BRINGS a wealth of bloom to the garden; often it brings a bright-feathered cardinal to the boughs of the pomegranate bush there, and with the March winds over Tucson come rumors that the red-headed turkey buzzards which winter in Mexico have been seen winging above the twin spires of San Xavier del Bac where, it is said, they re-appear as regularly as do the swallows at Capistrano.

By these reliable signs I should know that spring has arrived. But what really convinces me is the little miracle of a small wildflower's appearance beside the path I sometimes take across a vacant lot to the corner grocery. It blooms there faithfully each year—a lonely, golden thing—and always takes me by surprise.

On so many days there is no flower there along the path—and then one day I come upon it, so bravely blossoming in the hard unfertile sand and suddenly, for me, spring is here!

It is time to rejoice in the year's awakening; time perhaps to indulge in flights of fantasy—in which the gardener's thoughts inevitably turn to the spade and the hoe, the seed packet and the nursery plant, and often soar away into realms of the most lovely and exotic bloom. And in this spring of 1957 this is quite permissible. Even the desert gardener may now give a very free rein to dreaming and planning—and planting.

This has not always been so. Only short years ago, "It won't grow here," was a stock expression. Today few people would venture saying that of any plant, although probably there are many plants which will never adapt to the desert, just as there are many plants which adapt easily to our gardens but are coveted—hopelessly—by people in other parts of the country.

For the most part I remain faithful to the standbys which have given me so much pleasure with so little care. But on certain balmy days of spring I go along with the dreamers of magnolia blossoms, bright bougainvillea blooms, the passion flower, gardenia, camellia or the Rose of Sharon (hi-

biscus)—all of which can be made to bloom in the desert garden.

The vining passion flower (*Passiflora*) is most at home here, being somewhat tolerant of alkaline soil and desert sunshine. It is a hardy plant which thrives best in a light fairly fertile soil. There are several varieties

Exotic flowers that can be grown in the desert garden: camellia, top left; bird-of-paradise, top right; and gardenia "Mystery," bottom. Photographs by Helen Gardiner Doyle.



but the *P. alato-caerulea* is the one most widely planted. In this area, unless protected from frost, it grows as a perennial, making a quick recovery from a winter freeze. It climbs by means of coiling tendrils and needs a trellis for support. Its foliage is heavy and thickly dense and its flower is famous for its beauty, fragrance and symbolic portrayal of the passion of the Lord as interpreted by early Spanish missionaries who discovered it in South America and, according to legend, saw in the bloom's lacy crown the crown of thorns—or halo; in the five stamens the crucifixion wounds; and in the 10 petals the 10 apostles. The flowers — white with pink and lavender shadings — are about four inches across.

Other varieties include the *P. manicata* with bright red-and-purple flowers and the *P. racemosa* with deeper red flowers having purple and white crowns. There are also fruit bearing varieties, not widely available.

About equally adaptable is the hibiscus. The hardy Rose of Sharon (*H. Syriacus*) thrives well in a sheltered, sunny spot. Unless favorably located, it will die back to the ground in winter but will benefit by a protecting six or eight inch high mound of dirt at its base. In Tucson this showy shrub whose history goes back to the Holy Land, is becoming quite popular, the scarlet and pink flowered varieties taking precedence over the white and purple.

The bougainvillea is definitely a borderline plant (vine) where temperatures drop to freezing. But few people, having once seen this vine's dazzling display of color—scarlet, magenta, purple-red—can ever forget it. And many will go to great lengths to provide it with the rich, moist soil it requires and will either protect it or enjoy it while they may, even if only for a summer.

Magnolias, gardenias and camellias all have two things in common. They are among the most exquisite flowers on earth, and they abhor alkali — a trait which the desert gardener must humor by planting them in an acid soil. The best mixture is predominantly peat moss acidified with a little manure and sulphur. And the new soil conditioning iron chelates should not be overlooked.

Until recently the evergreen magnolia has been regarded with skepticism in this area although a beautiful specimen has been growing and blossoming on the University of Arizona campus for a number of years. Now magnolias are gaining acceptance as a fairly good risk at our altitude of 2400 feet, and probably are a safer risk at lower elevations.

Being a tree, the magnolia will require a larger hole than the shrubs which need holes at least two feet in diameter and as deep. Lining the holes with heavy tar paper helps prevent alkali contamination.

Both magnolias and camellias have surface roots which should never be disturbed by cultivation or by the planting of flowers in their beds or basins.

These three aristocrats' requirements for sun and shade, heat and cold vary but slightly. All require some shade but it is most essential to the camellia which is less sun-loving and more hardy to cold than the others.

However camellias and gardenias go well together. A bed under a wide roof-overhang to protect them from both sun and cold would be fine for both, with camellias to bloom in spring and winter (there are many varieties with varying blooming dates) and gardenias in summer. Mystery, the "corsage" gardenia, blooms in June. Vietchi, a smaller flowered, smaller foliaged, low and spreading type blooms profusely then also, and continues to produce some blossoms throughout the year. Both have glossy green leathery foliage.

So much for part one of a spring fantasy, all or any portion of which may be realized in the desert garden. And now to come to earth among some old familiar friends—the pomegranate, the lantana, the bird-of-paradise.

These and other easy-to-grow shrubs may have become over-familiar to some people, but to others they surely have endeared themselves by their adaptability and their generous gift of bloom to even the poorest garden.

And that — the poorest — was just about what my garden was when, years ago, I planted a few Bird of Paradise (*Poinciana gilliesii*) seeds in a thin layer of top soil and saw them come up, grow to shrub size and then bloom in less time than it takes many annuals to flower. Only a few, pruned to form compact shrubs, remain but their exotic long red-stamened yellow flowers and lacy fern-like foliage are what first catch the eye of visitors to the garden, and many are the seed pods which have gone home with friends and relatives from the East and Midwest.

But I have never known of this lowly shrub becoming established there. Its home is on the desert and it is not to be confused with its prouder relative, the *P. Pulcherima*, the Red Bird of Paradise, native to Mexico or the genus *Strelitzia*, the tropical evergreen Bird of Paradise with broad banana-like leaves and huge bird-like flowers.

About the second thing to go into our ground was a lantana, a red-orange flowered one which Ted planted for me in an extremely casual manner, on

my birthday. Having too little faith in the little straggling thing and his gardening methods, I once ungraciously referred to it as his plant. And he, many times during the ensuing years, has called my attention to his thriving bloom-laden "buckberry" bush. He says he can't remember its name but I think that is just his pet name for my lantana. Later I planted a pinkish lavender and white one which never seems to do quite as well. Now I should like to have the new hybrid semi-trailing Goldrush, with soft yellow flowers. The profusely flowering trailing lantana (lavender) is lovely in planters and window boxes and it is the most cold-hardy variety. The others suffer frost damage but with the dead wood pruned away in spring they are as good as new—or better.

Perhaps the most carefree plant of the garden is the pomegranate. It too is often a conversation piece and, to unfamiliar eyes, is strange and exotic.

But even to familiar eyes it never is monotonous. It blossoms with bright red bell-shaped flowers in early spring and its glossy dark green leaves clothe it densely. During summer its fruits form and in autumn they hang lush and red upon the branches. Finally the leaves turn to gold and drop, leaving bare branches for only a short while before the pomegranate continues its cycle of surprising beauty.

There are non-fruiting varieties, some pink, some red with double flowers. All grow rapidly to about 10 feet. And the fruit-bearing *Wonderful* bears its very best in the desert garden and needs no pampering at all. A comforting thought to come to earth with, after a two-way spring flight of fancy.

NAVY DROPS PLANS FOR SALT LAKE BOMB RANGE

Plans for a bombing range over Great Salt Lake have been withdrawn by the U. S. Navy and a search is now being made for a site outside Utah.

Many Utah organizations protested against the proposed use of the area, contending that a serious air congestion problem would be created. Utah's congressional delegation requested that the Navy withdraw its application.

Meanwhile, an Air Force spokesman revealed plans for an air-to-ground ballistic missile range to be established near Winslow, Arizona. The government is seeking to lease 75 square miles of Navajo Indian reservation lands for the "impact area." The range would be five miles wide and 15 miles long.

The impact area would be surrounded by another tract of Navajo and Hopi land 20 miles wide and 100 miles long which would be a "restricted area."

LETTERS

Litterbugs Are Litterlouts . . .

Bend, Oregon

Desert: After viewing several losing battles in the war against the so-called Litterbugs, I offer the following line of attack:

Substitute the word Litterlout for Litterbug so that the Lout who has always considered himself as "cute as a bug" ever since his baby days, will find himself in proper perspective.

CECIL C. MOORE

Rainbow Bridge Not Threatened . . .

Amarillo, Texas

Desert:

I agree with the editorial stand taken in your January '57 issue against the construction of a bulkhead dam to protect Rainbow Bridge from the backed-up waters behind Glen Canyon Dam.

I have visited Rainbow five times, twice hiking from Rainbow Lodge and three times from the Colorado River when I was making solo trips on the river from Hite and from Mexican Hat to Lees Ferry.

It is with relief that I read the recent Bureau of Reclamation report that the dam will only have a maximum elevation of 3700 feet above sea level. The abutments of Nonnezoshie, with an elevation of 3732 feet, will therefore not be covered by the waters of Lake Escalante.

I hope Gregory Natural Bridge and other arches in the side canyons of the Escalante also are above the high water mark.

Certainly an access road should be made available above the dam site for those who would like to see Glen Canyon again and ride the rapids of the San Juan before they are drowned forever beneath the waters of the new lake.

Of course I realize the necessity of Glen Canyon Dam, but no recreation facility that could ever be created along the shores of Lake Escalante will replace the beauty of Glen Canyon.

BURTON G. ODELL

Water Sank Below Surface . . .

Whittier, California

Desert:

I read with interest the item in the January '57 issue regarding the probe for a giant underground water reservoir east of Mecca near the mouth of Box Canyon, California.

Years ago when the Metropolitan Water District aqueduct was being constructed, the area above Box Canyon

was known as Hayfield Dry Lake, and the aqueduct planners designated it as a possible reservoir.

When the system was completed water was turned into the dry lake, but to the amazement of the engineers the reservoir did not fill. Before the test was over, a violent thunder storm with a rainfall of cloudburst proportions hit the area but it too had no effect on the dry lake. Water disappeared rapidly into the ground and the lake would not hold water.

I cannot remember the exact figures but following the test the level of Salton Sea was raised appreciably.

PAUL J. LINSLEY

Desert Rat in Alaska . . .

Anchorage, Alaska

Desert:

Thanks to your magazine the long dark cold Alaskan winters are filled with a spot of sunshine and memories of home.

During the war I managed Heron Airport at Blythe and owned and operated a flying school there. Many times I have flown over and marveled at the mysterious stone outlines of oversized men on the hills north of that town.

I am a member of a very popular and active rockhound group here known as the Prospectors Club. We meet weekly and during the spring, summer and fall make field trips to the far corners of Alaska including the northern points of Nome, Kotzebue

and Pt. Barrow. We pan for gold, hunt jade and many other minerals and rocks which abound in Alaska.

BETTIE LUND CARY

More Safety on the Desert . . .

Springfield, Illinois

Desert:

Your editorial comment in the December issue concerning the belief of tenderfoot Americans that the desert is a place of sudden death is so true.

Last February I had the pleasure of spending a night out on the desert. Just another girl and myself miles away from everybody. It was an experience I shall never forget and hope to repeat. But when I told my relatives and friends what we had done they were shocked. Wasn't I afraid of snakes? Didn't I know there were poisonous spiders and scorpions in the sand? And didn't I have sense enough to be frightened away out there away from all civilization? Wasn't I afraid of Indians?

With the exception of my brother, who is a desert lover, people think I'm just a little crazy. I wish they could have been with us that night under the stars. We had a campfire of mesquite, and to keep it warm and glowing through the night, ironwood. Our camp was in a large wash which my western-born companion assured me was safe. A huge flat rock made a natural table and never had food tasted so good! We had no fancy sleeping bags or air mattresses, but

Calling Desert Photographers . .

Sunshine, shadow and subject. These are the three most essential factors involved in producing good photographs—and the Desert Southwest offers all three in bountiful quantities. Each month Desert Magazine gives two cash prizes to winners of our easy-to-enter contest which is open to both professional and amateur photographers of the desert scene.

Entries for the March contest must be sent to the Desert Magazine office, Palm Desert, California, and postmarked not later than March 18. Winning prints will appear in the May issue. Pictures which arrive too late for one contest are held over for the next month. First prize is \$10; second prize \$5. For non-winning pictures accepted for publication \$3 each will be paid.

HERE ARE THE RULES

- 1—Prints must be black and white, 5x7 or larger, on glossy paper.
- 2—Each photograph submitted should be fully labeled as to subject, time and place. Also technical data: camera, shutter speed, hour of day, etc.
- 3—PRINTS WILL BE RETURNED WHEN RETURN POSTAGE IS ENCLOSED.
- 4—Entries must be in the Desert Magazine office by the 20th of the contest month.
- 5—Contests are open to both amateur and professional photographers. Desert Magazine requires first publication rights only of prize winning pictures.
- 6—Time and place of photograph are immaterial, except that it must be from the desert Southwest.
- 7—Judges will be selected from Desert's editorial staff, and awards will be made immediately after the close of the contest each month.

Address All Entries to Photo Editor

The Desert Magazine

PALM DESERT, CALIFORNIA

slept on the ground, making places for ourselves in the sand.

Until the moon came up the stars were near enough to touch. And in the stillness of the night the wind came whispering down the wash, bending the smoke trees gracefully before it and gently touching our faces. While the night was still young the moon rose and bathed the desert in beauty. Stately saguaro stood out in relief and the cholla gleamed like silver. And if there is anything more lovely than a smoke tree in the moonlight I have yet to see it. We could hear the little scurrings and rustlings of small night creatures about their business. And I could hear the silence. Blessed, peaceful, soul restoring silence.

You probably have surmised by this time that I am a lover of the desert and every cactus and shrub in it, to say nothing of its wildlife, large and small. I don't live in Illinois, I just exist here between visits to my beloved west.

And I'll take my chances with the snakes, the scorpions, the tarantulas, the black widow spiders and the Indians and be far more safe than crossing the street in the city.

MARY L. WOLFER

• • •

Needs Sunflower Seeds . . .

Bloomington, Indiana

Desert:

I am making a scientific study of sunflowers (*Helianthus*), and I need seeds of the three desert sunflowers. I thought perhaps some of your readers might be able to help me.

The first of these wild sunflowers is *Helianthus anomalus* which has previously been collected in northern Arizona (Beaver Dam, Hopi Indian reservation and Monument Valley) and Utah (Wayne County and Juab County). This sunflower is rather similar to the common sunflower of roadsides but is somewhat smaller and has a lighter green leaf.

The second is *Helianthus tephrodes*, a perennial, which is readily recognized by the densely hairy leaves which are white in color. It is found in Imperial County, California, and has been collected in sand hills near Yuma, Holtville and Kane Springs.

The third is *Helianthus niveus* which is similar to number two but has a more grayish cast to the leaves. It is apparently rather common on the west coast of the northern half of Baja California.

I will certainly appreciate receiving specimens or seeds of any of these sunflowers and I will be glad to repay the postage.

CHARLES B. HEISER, JR.
Botany Department
Indiana University

Forecast Is For Below Average Water Runoff In Southwest . . .

The water-supply outlook for the major streams of the Southwest is for less than average streamflow, the United States Weather Bureau reports. The latest available data, however, was compiled prior to the mid-January storms which brought rain to most of this area.

Precipitation over the drainage area of the Colorado River Basin above Cisco, Utah, was variable with the extreme headwaters of the Colorado River receiving amounts ranging from 60 to 85 percent of normal while the lower valley stations generally received amounts near 50 percent of normal. Thus the expected streamflow is: headwater area, 85 percent of the 15-year average; Colorado River near Cameo, Colorado, 80 percent of average; Colorado River near Cisco, 70 percent; Taylor River, 90 to 100 percent; Uncompahgre River, 70 percent; upper Dolores River, 60 percent; lower Dolores River, 50 percent; upper Duchesne River, 90 percent; lower Duchesne River, 74 percent; Strawberry Reservoir inflow, 78 percent; and Green River, 83 percent.

The water-supply outlook for the San Juan Basin is very poor, 60 to 65 percent of the 1938-52 average in the northern tributaries and 50 percent of the main stream at Farmington, New Mexico, and Bluff, Utah.

Precipitation over the Lower Colorado Basin during the four months September to December has followed the pattern of the past four years in that it was much below normal. Amounts for the period averaged only 25 percent of normal. November to June streamflow in the Little Colorado River Basin, even with normal precipitation for the months of January through June, is forecast to be only 20 percent of average. The situation is slightly better for the Verde and Salt Rivers where 25 percent streamflow is predicted.

Assuming precipitation for the remainder of the season will be near normal, forecast for the water-year streamflow for the Bear, Logan, Ogden and Weber Rivers in the Great Salt Lake Basin range from 85 to 95 percent of average. Other forecasts for streams of the Great Basin: Provo River, 96 percent; American Fork, 84 percent; Spanish Fork, 65 percent; upper Sevier River, less than the minimum of record; lower Sevier, 50 per-

cent; Humboldt River, less than 50 percent; Truckee River, 75 percent; West and East Walker Rivers, 70 percent; Carson River, 70 percent; Owens River, 86 percent; and Mojave River, 33 percent.

The story is much the same for the Rio Grande Basin: Rio Grande River at Chama, New Mexico, 49 percent; Rio Grande at Otowi Bridge, New Mexico, 43 percent; inflow to Elephant Butte Reservoir, 30 percent; inflow to Alamogordo Reservoir, 60 percent; Arkansas River, 70 to 85 percent; and Canadian River near Cimarron, New Mexico, 50 percent.

WHEN AN AFRICAN BUSHMAN WANTS A DRINK OF WATER

The unusual method by which the Bushmen of the Kalahari Desert of South Africa extract water from sand was revealed by British Colonel Laurens van der Post, who served in this region during the war. These natives, who have been forced out of the areas where the best water supplies are available by other tribesmen, have discovered that certain sands hide water and they have evolved a technique of sucking it out of these sands which only they know and which they guard very jealously, he reported.

"I have seen them do it," said Col. van der Post. "A Bushman goes about with either a reed or a kind of stick which he hollows out, and he takes it to this place of the secret sands—these sip-wells, as the Bushmen call them—and there he will pick some grass and tie it to the end of this hollow tube to keep the sand from getting into the opening; he will then dig down with a grubbing stick or with his spear three or four feet into the sand, put the stick in and pack it very tightly. Then he will take an empty ostrich eggshell, which has a tiny opening at the top, and put that down next to the tube.

"Then he will put his mouth to the tube, kneel down, and start sucking very hard, and within a minute—and it is a most miraculous thing to see—the water suddenly comes out, and as he sucks in at one corner of his mouth he squirts the water out at the other into this hole in the egg."—*London Calling* through the courtesy of Lloyd E. Caldwell, San Francisco, California.

Here and There on the Desert . . .

ARIZONA

Opposes Indian Land Project . . .

PARKER—Plans approved by the Indians for reclaiming 65,000 acres of fertile land in the Colorado River Indian reservation under a long term lease to white farmers have met with opposition from an unexpected source. J. H. Moeur, chief counsel for the Arizona Interstate Stream Commission, stated that he was opposed to the project until litigation between Arizona and California over the rights to Colorado River water is settled by a supreme court decision. This reservation land—60,000 acres in Arizona and 5,000 in California—is known to be the most fertile undeveloped land area remaining in the Southwest. The Indians, lacking the capital to develop it themselves, have given tentative approval to a lease under which the Midwestern Land Development company of Catron, Missouri, would clear, level and install an irrigation system on the total acreage in return for a long term lease. At the end of the lease the land would be turned back to the Indians in a high state of cultivation. While it is recognized that the Indians have a right to water for their valley lands, the Arizona Stream Commission questions the right to develop the land for the use of white lessees. The Indian Tribal Council has indicated that it will send representatives to Washington if necessary to defend its right to enter into the lease.—*Yuma Sun*.

Huge Electric Plant Planned . . .

YUMA — A \$20,000,000 electric generating plant is scheduled for construction in the Yuma Valley beginning in March. Plans for construction of the 160,000-kilowatt electric plant, and formation of a power generation pool with two Southwestern utility companies, were revealed by the Arizona Public Service Company. The plant will be located on an 80-acre site four miles west of Yuma. It will be built in conjunction with California Electric Power Company and the Imperial Irrigation District. The three companies serve southwestern Arizona and southeastern California. — *Yuma Sun*

KENT FROST JEEP TRIPS

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Write KENT FROST, Monticello, Utah.

OK Corral Restoration . . .

TOMBSTONE—Work currently is underway to restore the OK Corral where frontier lawman Wyatt Earp and his companions staged their famous gun fight with lawless elements of the territory. Sponsoring the project is the Tombstone Lion's club which hopes to complete the work this year. —*Tombstone Epitaph*

Lake Mead Shortcut Dedicated . . .

PHOENIX — The newly-paved shortcut road between Phoenix and the Lake Mead recreation area was officially dedicated in January. State Highway 93, a 123-mile route through some of the state's most isolated areas, will cut off nearly 100 miles from the distance between Phoenix and Kingman through Ashfork. The one-time wagon trail has been re-aligned and paved in small sections during the past five years.—*Yuma Sun*

Driest Year on Record . . .

PHOENIX—Only 2.82 inches of rain fell in Phoenix during 1956 making it the driest year ever recorded. First official precipitation records for Phoenix were made in 1895. Prior to 1956, the driest year on record was 1947 when 3.00 inches of rain fell.—*Phoenix Gazette*

Mexico Extends Labor Pact . . .

WASHINGTON, D. C.—The Mexican and American governments have agreed to an extension to June 30, 1959, of the agreement providing for importation of Mexican workers to work on U. S. farms. Under the agreement, negotiated in 1951, about 450,000 Mexican workers were permitted to enter this country to supplement the domestic farm labor supply, mainly on farms in the Southwest. Farmers can contract for workers for a minimum period of six weeks and a maximum period of six months.—*Yuma Sun*

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Gulf Road Reported Under Way . . .

YUMA—The long-awaited and oft-promised paved road to the Gulf of California is reported under way. According to reports received in Yuma, the blacktop paving has been started at Rillito, about half way to the Gulf. The route from San Luis to Rillito already is surfaced. The distance from San Luis to the gulf is about 75 miles and at present the rough trail connecting San Luis with the gulf cannot safely be traveled in passenger cars.—*Yuma Sun*

CALIFORNIA

Monument Travel Increases . . .

TWENTYNINE PALMS — Total visitors to Joshua Tree National Monument for the travel year ending December 31, 1956, amounted to 312,889 persons. This is an increase of 32,330 visitors over the 1955 travel year.—*Desert Trail*

De Anza Highway Urged . . .

BORREGO SPRINGS — Construction of a highway in the northern part of Borrego Valley to follow the historic De Anza Trail through Coyote Canyon into Imperial and Yuma valleys was urged in a resolution adopted by the Borrego Springs Chamber of Commerce. Besides the historic significance attached to the route, the chamber pointed out that the highway would provide a shorter and cooler farm to market road for Imperial and Yuma valley farmers, and also a scenic mountain and desert trail for tourists.—*Borrego Sun*

Mushroom Rock Topples . . .

DEATH VALLEY—One of Death Valley's most famous landmarks, the curious-shaped boulder which resembled a giant mushroom with its roughly rounded head and slender stem, is no more. Erosion had carved growing holes in the stem and it gave way during a wind storm, toppling the huge rock over on the rough alluvial fan.—*Inyo Independent*



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BOOKS—MAGAZINES

INTERESTED IN Nevada? A new miniature album just printed contains 10 fine Kodachromes of historic mining towns around Nevada, with brief descriptions and locations. "Historic Highlights of Nevada" available now for just 25c in coin or money order to: E. W. Darrah, P. O. Box 606, Winnemucca, Nevada.

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DESERT MAGAZINE Back Issues wanted. We will pay \$5 for November, 1937 issue; \$2.00 for February, 1939; and \$1.00 for March, 1939. Must be in good condition. Mail to Desert Magazine Circulation Department, Palm Desert, California.

INDIAN GOODS

FIVE FINE Prehistoric Indian arrowheads \$2.00. Perfect stone tomahawk \$2.20. Effigy pipe \$5.00. Perfect flint thunderbird \$3.00. Flint fish hook \$3.00 List free. Five offers for only \$12.00. Arrowhead, Glenwood, Arkansas.

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MISCELLANEOUS

REAL "DO-IT-YOURSELF" Books! Want a Pool? Read "Let's Build a Swimming Pool!"—\$1.00. Want to Pan Gold? Read "Gold Panning for Profit"—\$1.00. Both Books \$1.50. J. Robertson, Box 604, Stockton, California.

GHOST TOWN ITEMS: Sun-colored glass, amethyst to royal purple; ghost railroads materials, tickets; limited odd items from camps of the '60s. Write your interest—Box 64-D, Smith, Nevada.

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Tramway Opposition Mounts . . .

IDYLLWILD—Although the controversial San Jacinto Mountain Tramway Project appears to be dead as a result of the refusal of the State Park Commission to renew its contract with the sponsors of the project, dedicated wildlife enthusiasts are determined to bury the project so deeply it can never be resurrected. So that the park may continue to be regarded and managed as a primitive area, and to prevent any renewal of the expired tramway contract or the writing of any other contract for commercial use or opening of the park, the Idyllwild Citizens Group is presenting legislation through Assemblyman Ernest Geddes and several co-sponsors for the repeal of the Mount San Jacinto Winter Park Authority Act.—Hemet News

Glamis Road Slow-Up Charged . . .

BLYTHE — Senator Thomas H. Kuchel, expressing great surprise at continuing delay, has asked Navy Secretary Charles Thomas to expedite payment of \$660,000 to Imperial County for construction of an alternate sand hills crossing between Niland and Blythe to replace the road through the Chocolate Mountains Bombing Range closed for many years to facilitate naval aviation training. According to Kuchel, the Navy has hampered action on the long-needed project. The controversy over closing of the road across the Chocolates is in its eighth year.—*Palo Verde Valley Times*

Sen. Charles Brown Honored . . .

BISHOP — Desert pioneer Charles Brown was honored for his 32 years of public service when the new auditorium at the Eastern Sierra Tri-County fairgrounds in Bishop was dedicated in his name. State Senator Brown has been elected to five four-year terms and prior to that served as an Inyo County supervisor.—*Inyo Register*

Colorado at Record Low . . .

BLYTHE—For the fourth consecutive year the runoff of the Colorado River has been much below average, reports the Bureau of Reclamation. During the past four years only 63 percent of the 33 year average of 12,500,-

000 acre feet was recorded. Runoff during September, 1956, was about 184,000 acre feet, second lowest ever recorded for the month of September. On April 25, 1956, the storage in Lake Mead was 10,679,000 acre feet, lowest since 1937 during the original filling period.—*Palo Verde Valley Times*

NEVADA

Ask Park Status for Fort . . .

MINDEN — Legislative action to permit the state to accept title to the Genoa Fort and Stockade was recommended by the Douglas County commissioners. The Nevada Park Commission cannot accept title to site of the first white settlement in Nevada, without specific legislative authority.—*Nevada State Journal*

Divorce Business Slumps . . .

RENO — Reno's famous divorce business slipped slightly in 1956 from the previous year's level. There were 4420 divorce actions filed in the city last year compared to 4458 in 1955. Although final figures were not available, there were enough figures to show that the 1956 marriage license business was ahead of 1954 and 1955 in Reno.—*Nevada State Journal*

Cloud Seeding Asked . . .

LOVELOCK — Cloud seeding for Pershing County was urged by the county chamber of commerce meeting in conjunction with representatives of

the Pershing County farm bureau and water conservation district. A resolution was adopted requesting the Northern Nevada Cloud Seeding Committee to continue the operation.—*Nevada State Journal*

Cricket Invasion Feared . . .

CARSON CITY — Nevada is in danger of another serious invasion of the crop-devastating Mormon crickets this summer, the State Agriculture Department announced. The insects are expected to swarm into the mountain area western states, with Montana, Nevada and Wyoming due to suffer the most.—*Nevada State Journal*

Historic Lands Sold . . .

RENO—Announcement of an exchange of Nevada and California properties revealed new ownership and management for the historic Winnemucca and Milk ranches north of Reno in Washoe County. Approximately 20 square miles of ranch lands lying west of Pyramid Lake were involved.—*Nevada State Journal*

Commissioners Endorse Park . . .

ELY—The Nevada Association of County Commissioners, meeting in convention at Las Vegas, endorsed the proposed creation of the Great Basin Range National Park in eastern White Pine County. The park would embrace the Mount Wheeler-Lehman Caves areas.—*Ely Record*

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Predator Problem Increases . . .

ELY—Livestock men in the Ely area are concerned over what they term a rapid increase in predatory animals and the extensive damage they are doing to sheep herds. Some ranchers estimate 15 percent of their herds have been destroyed by predators. They believe the predator control program administered by the U.S. Fish and Wildlife Service in cooperation with the Nevada Fish and Game Commission, is failing to accomplish its purpose and that a bounty system should be adopted instead, or at least to replace a large portion of that program.—*Ely Record*

NEW MEXICO

Pueblo Claim Studied . . .

TAOS—The Indian Claims Commission has taken under consideration a Taos Pueblo claim to title to the Blue Lake area and recovery or compensation for another 110,000 acres in and around Taos. The Blue Lake area, covering 30,000 acres, is in Carson National Forest. In 1933, the tribe was given a 50-year lease to Blue Lake, but now the pueblo seeks full title, arguing that constant encroachment by tourists and fishermen have interfered with its right of worship and desecration of a tribal shrine. —*New Mexican*

Indian Leader Honored . . .

AZTEC — The 1956 George B. Bowra Navajo Indian Achievement Award was presented to John Blackie, an uneducated Navajo who has spent the majority of his 65 years fighting for the preservation of the old traditional ways of his tribe, yet giving ground to new ideas and urging his people to abide by the law and respect the rights of others. Blackie is a leader in the struggle against the use of intoxicating liquor by his people. The Navajo is sending his six children to school although he himself does not speak English.—*Independent Review*

Lad Walks 90 Miles Home . . .

FENCE LAKE — A 16 year old Navajo boy, Samuel Garcia, who walked 90 miles from the Fort Wingate boarding school near Gallup to his home at Fence Lake, will not be required to return to the vocational school managed by the U.S. Bureau of Indian Affairs, it was learned. Sam was rounded up with several other children whose parents are on the welfare roll by Navajo Police who were instructed to move them to Wingate. Sam's father, however, is a successful sheepman and is not receiving welfare assistance. The boy did not stop to eat on the long walk which took three days and two nights. After a night's rest at home, he attended school at Fence Lake and the 26 students in his class celebrated his homecoming with ice cream and cake.—*Grants Beacon*

Speed Limit Now 70 MPH . . .

SANTA FE — New Mexico's state speed limit is being relaxed to 70 miles per hour following a decision handed down in a test case. The 1953 legislature raised the speed limit to 70, but despite this action the official limit had been regarded as 60. The new speed limit does not apply to those stretches of highway where traffic engineering studies indicate slower speeds are called for.—*New Mexican*

UTAH

Reservation Road Improvements . . .

MONTICELLO—Blacktopping will be completed on the main north-south route through San Juan County to the

Arizona state line probably within this year and to Kayenta, Arizona, 26 miles south of the line, within fiscal year 1958, Commissioner of Indian Affairs Glenn L. Emmons announced. Utah has extended its federal-aid secondary system from Mexican Hat to the state line at Goulding's. From Blanding southwest to Mexican Hat (52 miles) oiling of existing roadway presently is under contract and the state proposes to advertise soon for provision of a 24-foot bituminous road linking Mexican Hat to the state line. The Bureau also plans replacement of five bridges between Kayenta and Tuba City as part of the current-year program.—*Moab Times-Independent*

Glen Canyon Bridge Bids In . . .

KANAB—A California contractor has submitted a low bid of \$4,139,277 for construction of the nation's highest steel arch bridge across Glen Canyon, about 900 feet downstream from the dam site. Final decision on awarding the contract will come from the Denver office of the Bureau of Reclamation after it studies all bids. The engineers' estimate for the job was \$2,944,750. The bridge will tower 700 feet above the Colorado River and extend 1271 feet from rim-to-rim across Glen Canyon which has nearly vertical walls. The span of the arch of the bridge will be 1028 feet making it second only to the steel arch span of the Bayonne Bridge in New York City. The big bridge will be 40 feet wide with a 30 foot roadway and two sidewalks, each four feet wide.—*Southern Utah News*

Dinosaur Visitor Record . . .

VERNAL — Dinosaur National Monument's visitor total for 1956, 73,000 persons as of December 1, was the largest in the monument's 41-year history. The rebuilding of U. S. Highway 40 at the height of the tourist season and the closing of the quarry after Labor Day did not interfere with the establishment of the new record. Over 1000 people made boat trips on the Green and Yampa rivers in the monument.—*Vernal Express*

Drouth Worst in 300 Years . . .

WASHINGTON, D. C.—The U.S. Weather Bureau reported that Southwest drouth conditions as of mid-January probably are the worst since the 17th Century. The Bureau declared that the severity of the drouth has in general equalled or exceeded that of any other drouth occurring in the same area since the beginning of precipitation records in about 1850. It added that tree ring data suggest that there have been no drouths of substantially greater severity in Western and Southwestern states since about 1670 and perhaps not since 1570.

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MINES and MINING

Ely, Nevada . . .

The development of a new geo-physical tool, the magetometer, which not only is valuable in prospecting for mineral deposits but also will determine the depth of sedimentary rock layers which overlie igneous rocks, was disclosed by Dr. C. N. Steenland of Houston, Texas, at a meeting of the Eastern Nevada Geological Society. Dr. Steenland said the magetometer was particularly useful in oil exploration.—*Pioche Record*

Reno, Nevada . . .

Development work on the Galena Hill lead-zinc-silver mine, 11 miles southwest of Reno, is progressing satisfactorily, company officials reported. Much core drilling has been done on various sections of the property to determine the direction and extent of the principal veins, the amount of overburden to be removed, and also to check the potentials of the numerous feeder veins.—*Nevada State Journal*

Carson City, Nevada . . .

Offered at no charge to residents of Nevada and at 50c a copy for those sent outside the state is the reprint of the booklet "Nevada Mining Claim Procedures." The supply of "State and Federal Mining Laws" compiled by the State Mine Bureau at Carson City is exhausted but a planned new edition has been deferred until the completion of the recodification of Nevada laws.—*Nevada State Journal*

Yuma, Arizona . . .

Holken Mining Company, with a five year contract with the Federal government to produce highgrade manganese concentrates, has begun operations at its mill near Yuma. Ore for the mill is being mined in Imperial and Yuma counties and delivered to the mill at the current rate of 100 tons a day. With a few additions the mill can process 400 tons a day, the company announced.—*Yuma Sun*

Las Vegas, Nevada . . .

Sale of the controlling stock of U. S. Lime Products Corp., with attendant expansion of the company's Southern Nevada holdings, was announced. Flintkote Co. has taken control of the company. Largest expansion planned is the establishment of a plant at the Apex holdings, on the mesa north of Las Vegas. The new plant will give work to an estimated 100 men.—*Pioche Record*

Indio, California . . .

The Western Mining Council's Desert Chapter has asked Congressman D. S. Saund to introduce a bill which would permit mining and prospecting in Joshua Tree National Monument. The chapter said there is much evidence in the state and county in support of this proposal.—*Coachella Valley Sun*

San Juan Basin, Utah . . .

Plans for a 515-mile line to pipe crude oil from the San Juan Basin to eastern New Mexico and Western Texas were announced. Texas-New Mexico Pipe Line Co. said it expects to build a line that will have a 50,000 barrel a day capacity. The announcement represents the first formal confirmation by the Texas Co., which shares control of the pipeline company, of its apparent rejection of a bid to join Shell Oil Co. and Standard Oil Co. of California in construction of a crude line from the basin to Los Angeles.—*New Mexican*

Salt Lake City, Utah . . .

J. D. Archer of Salt Lake City filed a potash lease application covering nearly 1,000,000 acres of public domain in Grand and San Juan counties. It is believed that this is the largest single application ever made for a specific mineral in the history of the 1920 mineral leasing act.—*Salt Lake Tribune*

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Ely, Nevada . . .

Kennecott Copper Corporation announced that underground operations were concentrated in the Minnesota Hi ore body which lies above and south of the Deep Ruth ore body. The Minnesota Hi ore has to be mined before the mining of the Deep Ruth ore body can begin since it lies within the Deep Ruth projected caving area. The company anticipates that the Minnesota Hi project will be completed some time this year. Mining and development of the company's newest pit, the Veteran, is proceeding rapidly. When completed, it will be nearly 2500 feet long, 1500 feet wide and 800 feet deep.—*Ely Record*

Blanding, Utah . . .

A half interest in 42,746 acres of gas and oil leases owned by Four Corners Uranium Corporation and Out West Uranium and Oil Company was sold to the Standard Oil Company of California for an initial cash payment reported to be in excess of a half million dollars. The area is near Blanding and the old Bears Ears Road passes through it for a distance of eight miles.—*San Juan Record*

Vernal, Utah . . .

The Uintah Basin's oil reserves are the largest known in the world but have received the least amount of exploratory attention, the *Oil and Gas Journal* reports. The basin holds an estimated 400 to 600 billion barrels of oil, but it is entrapped in sands and shales which would cost so much to extract that it cannot compete with oil-well oil at this time.—*Vernal Express*

Randsburg, California . . .

Resumption of gold mining operations is planned at the Black Hawk mine near Randsburg. Bel Air Mining Co. has overhauled the mill at the mine and is getting the mine in shape for new operation. Bel Air plans to mill its gold at the mine site.—*Mining Record*

Goldfield, Nevada . . .

Monarch Milling and Mining Co. has 15 men employed at its Goldfield operation. The mill has been put into working condition and a retort is under construction. About 100 tons of cinnabar now are at the mill awaiting treatment.—*Battle Mountain Scout*

Washington, D. C. . . .

Relief for tungsten, asbestos and fluor-spar miners has been proposed in a bill introduced in Congress by Senator George W. Malone of Nevada. About \$30,000,000 has been requested to continue government buying of those minerals included in the purchase act of 1956. The original \$21,000,000 extending the Malone-Aspinall act of 1953 and appropriated last August, was exhausted for tungsten, asbestos and fluor-spar early in December, 1956. — *Nevada State Journal*

Johnsville, California . . .

The historic Sunnyside Mine eight miles west of Johnsville is being reopened by T. L. Park, Los Angeles mining engineer and oil operator. Contract crews have been driving on a 350 foot drainage and working tunnel to tap the old McCray Ridge Channel which yielded nuggets weighing five, eight and 15 pounds in years past. The 15 pound nugget, said to be one of the largest ever found in a California placer deposit, sold for \$3276. At the present price of gold it would be worth more than \$7000. The Sunnyside Claim was located in the 1890s by the late B. L. Jones of Quincy.—*Nevada State Journal*

Hamilton, Nevada . . .

The Hamilton Corporation, which has under bond and lease a group of claims situated three miles south of Hamilton, has started work on a main cross adit designed to cut the vein zone at a level of about 250 feet. Inside installations are planned for the sinking operation of up to 3000 feet in depth. Principal ore in the mine is lead-silver. The mine is in the White Pine mining district which was a prolific producer of high grade silver ores as well as of lower grade lead-silver ores. In the late 1860s 30,000 persons lived in the towns in this district including Hamilton, Treasure Hill, Eberhardt, Shermantown and others. — *Eureka Sentinel*

URANIUM NEWS

Private U-Mill Investments Reach \$50,000,000, AEC Says

The estimated investment in the privately owned uranium mills in operation in this country at the close of the year amounted to \$50,000,000, the AEC announced.

Twelve mills now are operating, including AEC mills, with a capacity of 8960 tons daily, and eight more mills are contracted for. These are expected to be finished this year or early in 1958 to make a combined U. S. mill capacity of 12,985 tons daily.

The AEC recently announced a new commission policy to remove much of the secrecy heretofore enshrouding actual production of uranium, ore reserves regarded as proven by exploratory work and as to the development of a civilian nuclear industry in the United States.

Uranium Firms Enter Joint Bid for Mill

Sabre-Pinyon Corporation and Homestake Mining Co., both operating in the Ambrosia Lake Region of New Mexico and both negotiating for AEC contracts to build uranium processing mills, have combined forces to apply for a contract for a single big mill.

The new arrangement calls for a mill to handle 1500 tons of ore daily. Homestake and some other producers previously had submitted a joint proposal for a 750 ton per day mill. Under its limited partnership agreement with Sabre-Pinyon, Homestake is to have complete charge of the development and operation of the uranium mines and supervise, design, construct and operate the proposed mill.—*Grants Beacon*

Scientists Unveil New Atomic Energy Process

A cold fusion method of producing atomic energy without using uranium or million-degree heat was announced to the American Physical Society by Dr. Louis W. Alvarez, head of the University of California discovery group. The process—still a laboratory phenomenon—has produced so little energy so far that the most sensitive instruments are necessary to measure it, Dr. Alvarez said. The energy involved only a few hundred atoms of hydrogen.

The new process involves an atomic particle called a negative mu meson that pulls together the nuclei of a heavy hydrogen atom and a light hydrogen atom and fuses them into a helium atom. The fusion causes the two hydrogen nuclei to lose some weight which is converted into energy. The reaction is fundamentally the same thing that happens in a thermo-nuclear reaction. — *New Mexican*

Rumors of a rich uranium strike were heard in Holbrook, Arizona, recently. Locals of the bonanza is said to be the Central Little Colorado River Valley, about equal distance between Holbrook and Winslow but several miles to the north of the river itself.—*Holbrook Tribune-News*

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AEC Launches Plan to Spur Nation's Atomic Development

The Atomic Energy Commission set in motion a new plan aimed at speeding the nation's development of atomic power.

Chairman Lewis L. Strauss announced the first invitation for public and private groups to propose reactor projects under a liberalized program of AEC assistance. The invitation is the third under the commission's power demonstration reactor pro-

gram but the first since Strauss urged new steps to encourage greater efforts in this increasingly important field.

Strauss outlined the goal of the program as the early development of reactor technology "to the point where they will be economic in competition with kilowatt produced from conventional fuels."

The new invitation calls for submission of proposals as soon as possible. In contrast with previous invitations, each proposal will be considered as it is received rather than after all plans have been submitted. There is no time limit for turning in proposals—another departure from the past—but the commission does stipulate that construction of all plants proposed must be completed by June 30, 1962.

No limit is placed on the type or size of reactors proposed, except that "they should make a significant contribution toward achievement of commercial utilization of nuclear power."

Groups submitting proposals must put up funds for plant construction but the commission will help in research and development.

In still another break with the past, the AEC will waive for five years under some circumstances the charges it normally levies for the use of nuclear materials used in reactors.—*New Mexican*

Rich Uranium Strike Reported in New Mexico

The AEC announced that shipments of high grade ore have been received from the La Bejada region in Sandoval and Santa Fe counties, New Mexico. The La Bajada mine, 17 miles southwest of Santa Fe, is an abandoned copper mine. Operators expect shipments to average 100 tons per day. Ore from the mine was said to assay .48 percent uranium.

Lone Star Mining and Development Co. has acquired mineral leases on 680 acres of acquired Federal lands on the old La Bajada Grant on which the mine is located.—*Sandoval Journal*

Future U-Strikes Will Be Made with Drill, Expert Says

Jack Turner, Moab, Utah, uranium millionaire, still recommends family-style prospecting, but he suggests these amateur get-rich-quick hunters had better prepare themselves for disappointment.

"There always is the possibility of a big strike," Turner conceded, but he added that the chances of finding it with a geiger counter are far less than with a drill.

"The Colorado Plateau has been geiger-counter to death," he said, predicting that 99 percent of future uranium discoveries there will be made with a drill.—*Phoenix Gazette*

A revolutionary new type uranium processing plant, for which spectacular laboratory success already is claimed will soon be operating on Millers Flats below Tonopah, Nevada. The unit, a product of the Radio Chemical Corporation, is the result of many years of research into the development of a sound and economical flow-sheet for the recovery of both simple and complex uranium ores. The 50-ton mill is expected to be completed this spring.—*Ely Record*

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- 1—California.
- 2—Salt Lake City.
- 3—Members of the Bennett-Arcane party.
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- 6—Santa Fe, New Mexico.
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- 18—Navajos.
- 19—At Upper Sonoran zone elevations.
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AMATEUR GEM CUTTER

By DR. H. C. DAKE, Editor of The Mineralogist

The home gem cutter may obtain rough titania (rutile) for facet cutting. Synthetic rutile is one of the most remarkable and most brilliant of all gem materials, natural or manufactured. Unfortunately this manufactured material has a distinct yellow cast, which does detract from the otherwise great beauty and "life" of the gem.

This yellow cast is especially noted in

the larger facet cut stones, those weighing over two carats. To date this yellow color has not been removed, but it is expected that manufacturing refinements will eliminate this objectionable color, to produce a gem of great overall beauty. Another disadvantage of titania is its low hardness, hence it will not stand rough finger ring wear without developing scratches.

The manufacturers of synthetic titania offer the following suggestions for facet cutting.

The best angles for the crown facets are, main 30 deg., star 15 deg. and girdle 35 deg. The main pavilion facets are 40 deg. and the pavilion girdle facets 41½ deg. This is for the standard brilliant cut with 57 facets, including the table facet. The table facet may be from 0.4 to 0.6 the diameter of the stone at the girdle. The smaller table will render this portion of the finished gem less conspicuous.

The following polishing technique is suggested by the manufacturer of titania. Cutting of the facets may be done on a diamond lap using 400 grit diamond powder. However since this material is soft, a fine grit silicon carbide will quickly reduce the facets for polishing.

Preliminary polishing may be done with 10 micron grit diamond, on a tin lap, using olive oil as a lubricant and vehicle for the polishing powder. Final polishing is done on a 50-50 tin, lead solder lap, using Linde "A" polishing powder. The Linde "A" polishing powder, used with water, gives a good clear polish, said to be superior to that of one micron diamond powder. Since this material is soft, it is advised that the lap not be scored, except possibly in the case of polishing a large table.

* * *

A number of gem cutters are experimenting with making doublets of titania. Since titania is quite soft, the desire is to make a doublet, using some harder gem material for the crown portion of the facet cut stone, and titania for the pavilion portion below the girdle.

A number of gem materials have been tried for the crown portion including quartz, topaz and the many colors of synthetic sapphire. Some spectacular results have been obtained by this new cutting method, but more experimental work remains to be done, to determine the best angles of cutting both the crown and pavilion portions, and the most suitable material for the crown portion.

These doublets are made in the customary

manner. The crown and pavilion portions are first roughed out to the correct size and proportions. The flat and smooth bases of each are then cemented together with any first grade transparent doublet cement, and placed in a small clamp until the cement has set. Duco household cement, or some similar quick drying doublet cement may be used. Cements of this kind are insoluble in water, alcohol, and most other common solvents. If it is required to separate the doublet, this may be readily done by soaking in acetone, which is a solvent for the cement.

* * *

In finishing cabochons and flat surfaces of gem materials having a distinctly fibrous structure, the sanding and final polishing always should be done at right angles to the direction in which the fibres rest. This is especially true with a gem material like tiger eye, it being next to impossible to attain a proper final finish if this technique is not followed.

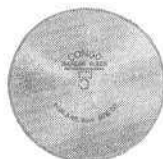
There are other gems where some difficulty may be encountered with the fibrous structure, but perhaps none as prominent as tiger eye. Other fibrous species include chrysoberyl (cat's eye), jade, tourmaline, agate, malachite and a few others. In most of these species the fibrous structure may not be noted by the unaided eye, but may be clearly revealed under magnification. If difficulty is encountered in polishing any of these gem materials, try polishing the cabochon or flat surface from one direction only. By experimenting from different directions the correct angle direction will be found.

Difficulty also may be encountered in polishing a large flat surface, like the table, on certain facet cut gems. This difficulty, however, usually is not due to any fibrous structure, but a case of sloughage in dealing with a material having a marked cleavage in one direction. This difficulty often may be overcome by redopping the gem, and polishing from the opposite direction. In the case of topaz, with a very marked basal cleavage, a change of direction will not aid in eliminating sloughing during the final polishing. Topaz should be so oriented that the basal cleavage will be about five to eight degrees off the basal cleavage, and not exactly parallel with same.

If difficulty is encountered in polishing a large table on a facet gem, there is one final and usually quite effective manner of dealing with it. Simply go to the felt buff, and in a matter of minutes, an excellent polish will be attained. This, however, is not regarded as skilled facet cutting, for it will be noted by the trained eye that where the crown table facets meet with the table the edges are not sharp as they would or should be normally, but will appear slightly rounded.

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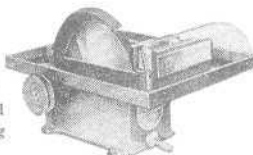


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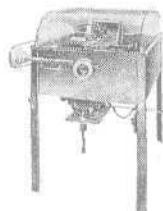
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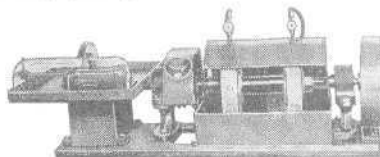
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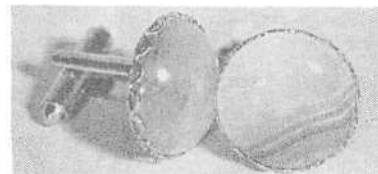
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Clubs Announce Spring Season Show Dates

The following shows have been scheduled for the coming months:

March 1-3—Phoenix, Arizona, at Agriculture Building, State Fairgrounds.

March 2-3—Pasadena, California, Lapidary Society at Davis Memorial Building, Altadena.

March 9-10—Tucson, Arizona, Gem and Mineral Society at Pima County Fairgrounds.

March 16-17—Castro Valley, California, Mineral and Gem Society at San Lorenzo High School.

March 16-17—San Luis Obispo, California, Gem and Mineral Club at Veterans Memorial Building.

March 23-24—Snohomish, Washington, Lapidary Club at New Armory.

March 30-31—Santa Monica, California, Gemological Society at Joslyn Hall.

April 27-28—Southwest Mineralogists at Palestine Masonic Temple, 41st Place and Figueroa St., Los Angeles, California.

April 27-28—CRA Rockhounds of Pomona, California, at Ebel Club House.

April 27-28—San Jose, California, Lapidary Society at Women's Gymnasium, San Jose State College.

May 3-5—Texas Federation of Mineral Societies annual show and convention, Bexar County Coliseum, San Antonio.

May 4-5—Stockton, California, Lapidary and Mineral Club and Mother Lode Mineral Society's San Joaquin Valley Gem and Mineral Show at New Agricultural Building, San Joaquin County fairgrounds.

May 4-5—Glendale, California, Lapidary and Gem Society at civic auditorium.

May 11-12—Gem and Mineral Society of San Mateo County, California, at fairgrounds.

May 24-25—East Bay Gem and Mineral Society at Oakland, California.

PASADENA SOCIETY PLANS ENLARGED SECOND SHOW

The Pasadena, California, Lapidary Society will hold its second annual Lapidary show on Saturday and Sunday, March 2-3 at Davis Memorial Building, Farnsworth Park, 620 East Mountain Curve, Altadena. The show is scheduled to be enlarged this year to include the exhibition rooms on both floors. The upper floor will contain lapidary and dealers exhibits, and the lower floor will have a complete working lapidary with members demonstrating the various processes. A snack bar and other special features also are planned.

The eighth annual Emmett, Idaho, rock show will be held in conjunction with the Gem County Cherry Festival on June 21-22, reports the Gem Rock Club of that city.

GOLD NUGGETS FEATURED IN PHOENIX GEM SHOW

AiResearch Lapidary Society, Maricopa Lapidary Society and the Mineralogical Society of Arizona have scheduled the annual Phoenix, Arizona, Gem and Mineral Show for March 1-3 at the Agriculture Building, State Fairgrounds.

Gold nuggets will be featured at the show with several collectors showing prized specimens found in Arizona and other states. Also scheduled for display is Keith Hodson's black fire opal mined at Virgin Valley, Nevada. The stone weighs seven pounds.

Lapidary equipment displays, a continuous showing of films, dealer displays and other exhibits also are planned.

GLENDALE SOCIETY CHANGES DATES OF ANNUAL SHOW

Dates of the annual Glendale, California, Lapidary and Gem Society's show have been advanced to the first weekend in May, the 4th and 5th. Theme of the event is "Rock-hounding Is Family Fun" and club members plan to emphasize that phase of the hobby in their displays. Glendale Civic Auditorium, 1401 Verdugo Road, will be the scene of the show.

CALIFORNIA FEDERATION LISTS COLLECTING DATA

The California Federation of Mineralogical Societies reports the following information regarding these collecting areas in the state:

Willow Creek jade area—open to collecting, but Lime Kiln Creek still is closed.

Plymouth chrysoprase — owners have closed this area because collectors failed to close gates, etc.

Drake's Bay—good hunting for whale-bone has been reported. Best material found in rock piles at the base of the white cliffs.

Leadpipe Springs—at present permission is not being granted by the Navy because it feels the area is dangerous due to the large number of unexploded shells still present. Collecting to be allowed at a later date.

Morgan Hill poppy jasper — new area reported open for field trips. Charge of \$1 per person made here.

Rosamond rhodonite — opening depends on fire hazard. Collecting by permission only from the Tejon Ranch Co., c/o Wm. E. Moore, Jr., P.O. Box 1560, Bakersfield, California.

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New Officers Named By Many Gem Societies

The Humboldt Gem and Mineral Society of Eureka, California, has elected Dale Laing president for the new year. Other officers are Robert Mountz, vice president; Florence Swanson, secretary-treasurer; Dorothea Laing, librarian.

* * *

New officers elected by the Compton, California, Gem and Mineral Club are Don Helmich, president; Dan Brock, vice presi-

Covington DIAMOND BLADES

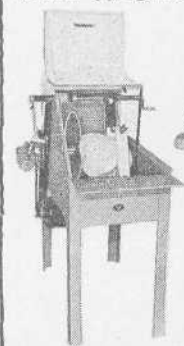
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14"	36.50	41.60	33.20
16"	41.60	52.15	37.80
18"	52.15	57.75	47.40
20"	57.75	83.30	52.50
24"	83.30	179.10	81.30
30"	179.10	267.60	151.10
36"	267.60		

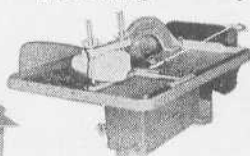
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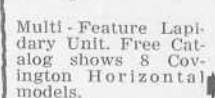
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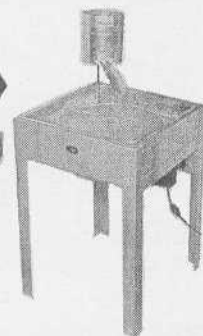
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dent; Ray Wakeman, treasurer; Ruth Giles, recording secretary; Pat Helmich, corresponding secretary; Nina Krienkamp, historian; and Reggie Edwards, librarian. — *Rockhounds Call*

The San Francisco, California, Gem and Mineral Society has elected the following officers for 1957: Alden Clark, president; Walter Eyestone, vice president; Eleanor Learned, secretary; Frances Carlson, corresponding secretary; Tom Colman, treasurer; Irene Bachelor, librarian; Ted Bhend, curator; and Lee Anderson, hostess. — *The Mineralog*

Wally Fisher was elected president of the 328-member Lockheed Employees Recreation Club's Rockcrafters Club of Burbank, California. Others named to office were John Bidwell, corresponding secretary; Lottie Cave, recording secretary; M. H. Johnson, treasurer. Special runoff elections are planned for the offices of vice president and federation director. — *Psephite*

Elected as new officers of the Evansville, Indiana, Lapidary Society were Ed Love, president; Roy Gerard, vice president; Alta Aulsebrook, secretary; and Herbert Muth, treasurer. — *News Letter*

Glenn Myhre has been named president of the Tacoma, Washington, Agate Club along with Fay Marsh, vice president; Richard Brass, secretary; Ellen Green, treasurer; Roy Meridian, director; and Cliff Messinger, federation director. — *Puget Sounder*

New officers of the Nebraska Mineral and Gem Club are John E. Hufford, president; Lloyd C. Fowler, vice president; and Mrs. E. C. Eisele, secretary-treasurer.

Elected as new officers of the San Antonio, Texas, Rock and Lapidary Society were Calvin Mansell, president; Lester Sunvison, vice president; Mary Schug, secretary; and Russel Ware, treasurer.

Members of the Indianapolis, Indiana, Geology and Gem Society elected these new officers: Ralph E. Hagemier, president; Jesse P. Harvey, vice president; Mrs. Martha Ahrendt, secretary; Fred S. Smith, treasurer; and Mrs. Elsa H. Smith, editor.

Thomas V. Harwell recently was elected president of the Riverside, California, Gem and Mineral Society. Serving with Harwell will be Clarence Wunderlich, vice president; and Kathryn Skinner, secretary-treasurer. New members on the board of directors are Lynn M. Skinner, Lloyd E. Holmquist and Francis A. Sloan.

Fred Cross was elected president of the Rawlins, Wyoming, Rockhounds, along with Gail Willis, vice president; Peg Miller, secretary-treasurer; Duke Parrish, corresponding secretary; and Louis W. Cassinat, director at large.

The Mineralogical Society of Salt Lake City, Utah, announced the following new officer slate for the coming year: Dr. Olivia McHugh, president; Leon Stanley, vice president; Mrs. O. J. Reiter, secretary; Dorthy Rogers, treasurer.


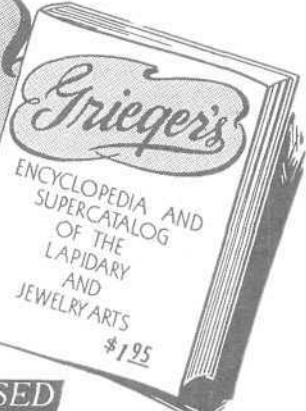
Elected to head the San Fernando Valley, California, Mineral and Gem Society for the coming year were Maurice Hebner, president; Hilton Stang, vice president; MarMae Enbody, secretary; and Dee Parson, treasurer. — *Rocks and Gems*

ENCYCLOPEDIA-CATALOG NOW AVAILABLE TO HOBBYISTS

Now available to gem and mineral hobbyists is Grieger's new 1957 Red Cover "Encyclopedia and Super Catalog of the Lapidary and Jewelry Arts." This is the 25th anniversary edition of the supply house's popular catalog and in addition to the wide selection of items offered for sale, includes instructive articles covering a wide range of subjects, including Facet Cutting, How to Cut Cabochons, How to Polish Specimens, How to Hard Solder, Care and Use of Grinding Wheel and many others. The space devoted to these illustrated features is equivalent to 84 pages of a regular textbook.

The catalog lists over 2200 different items, many of which are illustrated. Jewelry making tools and supplies, tumble polished gems, jewelry parts, cut gems, gem cutting machinery and supplies, lapidary-jewelry books, blank mountings, jewelry metals, ultra violet lamps, preforms and rough gem stock are some of the items carried in stock by Grieger's.

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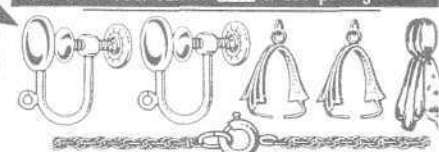
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Judges Tell What They Look For In Picking Winning Displays...

What do the experts look for when they are judging your competitive show display?

This was the question put to a panel of prominent members of the gem and mineral hobby at a recent meeting of the Mother Lode Mineral Society of Modesto, California. On the panel were Mrs. Nathalie Mahoney, long time secretary of the California Federation and an officer of the East Bay Mineral Society; Julian Smith, lapidary and jeweler of Modesto; and John Parnau, well known mineral collector, also of Modesto.

They pointed out that the first order of business for any exhibitor is to be completely familiar with the rules of the show he is participating in and to understand the various qualifications and categories of the event. After the judging, the competitor should study his score card and attempt to correct the weak points of his display.

Quality of material, of course, is the first thing the judges look for in mineral displays. This includes such factors as color, crystal arrangement, texture, clarity, physical condition of the specimen (freedom from flaws, cracks, soft spots, etc.) and amount of visible material identified. The panel emphasized that quality is judged in comparison with specimens of like material and not against more showy minerals.

Variety also is important in a winning display. This includes the non-duplication and rarity of the specimens.

The total effect of the display's background, lighting, arrangement, neatness and suitability all add up to showmanship, a third important consideration. The experts suggested that the exhibitor pay particular attention to avoiding the mixing of lapidary work and minerals unless entered in the mixed class. The object of showmanship is that the displays be seen, be interesting and be remembered.

Lighting is a highly important factor, the panel ruled. The light should come from above and incandescent type lighting enhances the display more than does fluorescent lighting.

Arrangement is still another factor in

Topaz cleaves so easily that a cut stone, if dropped, often cracks. Topaz takes its name from Topazios, which means "to seek" for the earliest known deposits were on an island in the Red Sea which often was surrounded by fog and therefore difficult for the local mariners to find. The stone's cleavage is parallel to its basal plane, almost perfect. It has a hardness of eight. Today Brazil is the chief source of this stone.—*Rockhound News and Views*

In order to get a high polish on rhodonite, finish sanding it on a partly worn 600 grit sander and then use a good polishing compound on an eight or 10 inch saddle leather disk, advises Earl Chamlee of the Gem Stone Ranch, Redding, California. Your cobbler or saddle shop has this heavy saddle or shoe sole leather for sale. Use it flesh side out. It also works well on jade.

Among the interesting exhibits planned for the Third Annual Tucson, Arizona, Gem and Mineral Society's show, March 9-10, are Erna Clark's "dinner of rocks" and Grant Ostergard's "working water wheel" made entirely of polished pieces of petrified wood. The show is scheduled to be held at the Pima County Fair Building in Tucson.

showmanship and here it is best to use simplicity unless one is a true artist. The overall effect should be without distraction. Crowding is a common error of the beginner.

Also important to the judges is labeling.

Here correctness of identification and spelling are the important factors. Neat hand printing in India ink is more attractive than a typed label. But most important is that the information given on the label be correct and complete as to common name, chemical name or formula, where found or place of origin.

Workmanship is perhaps the most important consideration in judging lapidary and jewelry cases. This includes symmetry, shaping and polish. In jewelry mountings, originality is the keynote.—*Mother Lode Ghost Sheet*

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K71-6	6" x .025"	5/8"		9.40
K71-9	6" x .032"	1/2"		10.15
K71-10	6" x .032"	5/8"		10.15
K71-17	8" x .032"	1/2"		12.40
K71-18	8" x .032"	5/8"		12.40
K71-21	8" x .040"	1/2"		13.60
K71-22	8" x .040"	5/8"		13.60
K71-23	8" x .040"	3/4"		13.60
K71-26	9" x .040"	5/8"		15.40
K71-29	10" x .040"	1/2"		16.70
K71-30	10" x .040"	5/8"		16.70
K71-31	10" x .040"	3/4"		16.70
K71-33	12" x .040"	1/2"		21.55
K71-34	12" x .040"	5/8"		21.55
K71-35	12" x .040"	3/4"		21.55
K71-37	12" x .050"	1/2"		24.15
K71-42	14" x .050"	5/8"		27.70
K71-43	14" x .050"	3/4"		27.70
K71-46	14" x .064"	5/8"		32.30
K71-47	14" x .064"	3/4"		32.30
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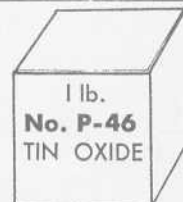
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TUMBLED GEMS of the desert for sale. Agates, jaspers, obsidians, etc. Mixed lots \$4 per pound. T & J Rockhounds, 9000 National Blvd., Los Angeles 34, California.

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GEMS OF THE desert, tumbled polished baroque. Mexican lace and carnelian agate, Death Valley jasper agate, rose quartz, petrified wood palm, black fig, many others. General mixture, \$6 pound. Mexican agate slices and various cuff link preforms. Slabs and findings. Earring size tumbled turquoise \$8 pound, larger size \$1 ounce. Price list. Golden West Gem Co., 7355 Lankershim Blvd., North Hollywood, California.

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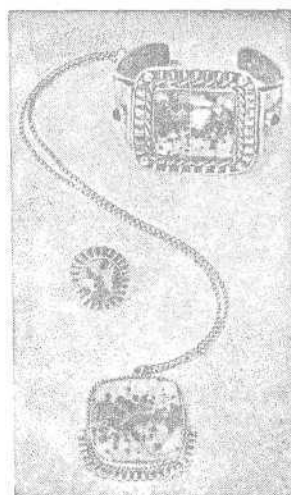
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FOR SALE: Beautiful purple petrified wood with uranium, pyrolusite, manganite. Nice sample \$1.00 Postage. Maggie Baker, Box 7, Hackberry, Arizona.

COLORADO MINERAL specimens, cutting and tumbling materials. Send 2 cent stamp for list and terms. Dealers please write for wholesale list. John Patrick, Idaho Springs, Colorado.

HAVE BROKEN purple bottles, onyx, uranium, lead-silver-gold, copper, cinnabar, peridots, opalites, talcs, petrified wood, geodes, photoglyms, tungsten — some will lamp, some gem grade. All collectors items. Sacked 35c pound; hand picked samples 50c pound. J. S. Wisdom, Goldpoint, Nevada.



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BOOKS of the SOUTHWEST

MILLIONS OF YEARS OF LIFE ON THIS PLANET

At some point during the estimated 4.5 billion years since the earth planet came into being, some atoms of inorganic matter became the cells of organic matter—and life began. It has been a long and tedious process—the emergence of man and the larger mammals of today from the amoeba of millions of years ago.

But Dr. Joseph Wood Krutch has undertaken to span this vast period of time in an interesting and stimulating book for the layman—*The Great Chain of Life*.

Even among the one-celled creatures, life was not as simple as humans generally assume, and as changing and more advanced forms of life appeared the process became ever more complex. But it is a fascinating story, and Dr. Krutch has told it well. Also, he has raised some questions for which the scientific world has yet found no answers.

For instance, in a discussion of the Darwinian theory of natural selection, the author raises a very serious question as to whether the more or less mechanistic rule of the survival of the fittest is an adequate explanation of all the life we see about us today. He writes:

"That the case for natural selection as a factor—and probably a very important one—is almost unassailably strong I have already admitted. It does take place, and unaided it may possibly be capable of producing organisms better fitted for survival than their parents. But whether or not it alone is sufficient to account for everything that has happened is quite a different question."

The author does not undertake to define the unknown factor which he suggests may enter into the evolutionary process. He admits frankly he does not know. No one knows.

But this book is not devoted entirely to academic discussion. The author's home is on the desert near Tucson and he is a close observer and constant student of the natural life around him. He brings to light many

fascinating observations of the insects, plants and animals which are his neighbors. His discussion of the difference between "pets," and animals which are becoming "civilized," will delight every owner of a dog.

Dr. Krutch's two previous books, *Desert Year* and *The Voice of the Desert* have been best sellers in the desert region.

Published by Houghton Mifflin. Sketches by Paul Landacre. 227 pp. \$3.75.

• • •

BOOKLET DESCRIBES WAYS TO DOMESTICATE DESERT FLORA

Desert homeowners interested in landscaping with native plants will welcome a booklet by W. Taylor Marshall (*Desert*, May '56), *Introduction to Desert Plants*. The author is director of the Desert Botanical Gardens at Phoenix, Arizona.

The first part of the book is devoted to a general discussion of the four types of plants found on the desert—succulent, xerophyte, mesophyte and annual. Using simple language, this short passage is an excellent foundation for a wider knowledge of desert flora.

The concluding section of the book concerns the culture of plants in each of these four groups. There is no substitute for experience when it comes to the sometimes exacting task of domesticating desert plants, and Marshall has made this his life's work. He includes helpful suggestions intended to insure the best possible results in this interesting and profitable home garden venture.

Published by Desert Botanical Gardens as Science Bulletin No. 3; with line drawings by Arthur Douglas and halftone illustrations; bibliography and index; 49 pages; paper cover; \$1.25.

• • •

COYOTE TALE TOLD WITHOUT APOLOGY, SENTIMENTALITY

Wildlife, especially the so-called predators, often are controversial sub-

jects. With exterminationists on the one hand crying for the destruction of all species whose habits run contrary to man's interest, and sentimentalists at the other extreme shedding tears for mice eaten by coyotes and coyote pups eaten by owls and owls eaten by cougars and cougars eaten by parasites borne to them by mice, it is refreshing to get a level-headed true conservationist's middle-ground judgment about one of Nature's more gifted children. Such a view is presented in Carroll Dewilton Scott's *Here's Don Coyote*, interesting and light reading with built-in appeal for everyone—from coyote haters to coyote lovers.

Scott tells the story of a fictitious coyote, Don, from his puppy days to adulthood. Nearly every one of the incidents in Don's life are based on the author's experiences with coyotes spanning 45 years. He presents these observations in a most entertaining and dramatic manner.

The sum total is insight into life on the coyote's level—not merely what he eats and when he eats—but how he lives out his philosophy, "make a living, amuse yourself, keep out of trouble."

Man vilifies the coyote because an animal slaughters a deer or a sheep

(Continued on page 43)

FREE! GUNFIGHTERS BOOK!

A GALLERY OF WESTERN BADMEN is a book of factual accounts on the lives and deaths of 21 notorious gun-slingers of the Old West such as Wyatt Earp, Billy the Kid, Wes Hardin, John Ringo, Jesse James, Bill Longley, Doc Holliday, Wild Bill Hickok, Clay Allison, Ben Thompson and 11 others! There are 26 authentic photographs!

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By RANDALL HENDERSON

7HANKS TO Senator Hubert H. Humphrey of Minnesota, Congressman John P. Saylor of Pennsylvania, and a number of co-sponsors including Senator Kuchel of California, there is now before Congress a measure designed to preserve some of the desert and mountain terrain of our nation in its original state as natural wilderness—just as we inherited it from the Creator.

It is not intended that these areas should be closed to Americans, but rather, that portions of them be closed to commercial exploitation—closed to any enterprise which would disturb the natural balance of Nature. As Ernest Swift, executive director of the National Wildlife Federation, has pointed out, they would not be recreational areas, but rather sanctuaries where members of the human family could find the peace and beauty of the landscape and its plant and wildlife world undisturbed by man's enterprise.

If you wonder why the human species needs sanctuaries I can only suggest that you read the records of slaughter on the highways, of juvenile delinquency, of mental patients in the hospitals, of intoxication and crime and vandalism, in the daily newspapers. Yes, we need places where adults may go and where youth may be taken to get acquainted and commune with the good earth and its creatures as God created them—away from the sophistries of a crowded and materialistic civilization. To such a place went Jesus Christ in preparation for his ministry.

Somehow, the idea seems to have gained prevalence that the earth and all that is on it were created for the sole benefit of man—to deface, to destroy, and to kill if it seems to serve the purposes of a particular individual or group. Anything that does not serve the immediate physical needs of mankind is regarded as worthless.

All of which would not be so tragic if man was always an enlightened creature. But we humans have come such a few rounds up the ladder of evolution—our vision is so obscure, our emotions are so undisciplined! Because the coyote kills a few chickens the state makes war on the coyote, and the rodent population increases to the point where it does tenfold more damage to the human food supply than did the coyote. We have so much to learn!

The bright side of the picture is that the scientists today are finding answers which will enable us to discard many of the ancient myths and superstitions and preju-

dices which today keep our world in a state of turmoil. Humans are confused in a world in which so much that the scientists are telling us is in direct contradiction to the stories which come from a book we Christians have always regarded as sacred. Somehow, our religion and our science must be reconciled. I believe it can be done. In the meantime we need natural sanctuaries to which earnest thoughtful persons may retreat, for it is only in such an environment that we may seek our answers in truth and beauty and humility.

* * *

Now I know why the writers send me so much poetry—ten times more than I can possibly print. Reading Arnold Toynbee's *An Historian's Approach to Religion*, I found this phrase: "There can be no self-expression without an audience."

So, bless their hearts, the poets must send their verses to editors. Else, where would they find an audience? The tragedy of this buy-it-on-credit age is that so many people are so busy meeting the monthly payments they do not have time to discover the beauty expressed in good poetry.

I do not enjoy returning poetry to the writers—and yet I have to do it many times every day—not always because it lacks merit, but because an editor has to eat—and no one ever heard of a poetry magazine that could afford to pay an editor's salary.

When poetry is rejected, we check one or more of the following reasons:

Subject is not essentially of the desert.....

We are oversupplied with poetry at present.....

This is not poetry, it is merely rhyme.....

We seldom publish blank verse.....

We suggest you check the metrical composition of your poem.....

Our poetry limit is 24 lines.....

We accept only contributed poetry.....

They are all honest reasons except No. 2. Sometimes I check that one to save face for the author of a poem which I think is very bad.

I check No. 3 on the list only when I know the poet personally, and am sure that he or she has a good sense of humor.

But I like all the poets—good, bad and humorless. This will be a dull drab world indeed if folks ever quit writing poetry.

BOOKS...

(Continued from page 41)

now and then—as if the coyote had a choice in its way of life. The truth is that in the coyote man has a worthy competitor, for the coyote, unlike so many other wild creatures, has adapted himself to man. Actually he succeeds in taking food out of man's mouth only when man is careless in the building of his chicken house or sheep pen or in the policing of his barn yard and watermelon patch.

The coyote's existence depends on hunting and at this he is a master, taught by Nature that death is the price for not using brains, patience and courage to conquer all who stand in the way of his survival.

Best of all, the book is neither an apology nor a simpering fountain of sentimentality for the coyote.

The biological survey hunter, the trapper, the boy, the rancher who appreciated their rodent-eradication work and Don himself all are shown doing about the same thing on the face of this earth—making a living, amusing themselves, keeping out of trouble.

Published by Westernlore Publishers, Los Angeles, California; line etchings by Clarence Ellsworth; 200 pages; \$4.50.

...

HUMAN SIDE OF U-BOOM MAKES LIVELY READING

The uranium boom — one of the wildest mining rushes in history—still is going strong on the Colorado Plateau and the little dramas of triumph and tragedy which have gone into making this story so far, have been compiled into a highly entertaining book, *U-Boom*, which puts emphasis on the human side of the rush. Author of this new volume is Al Look of Grand Junction, Colorado, who previously wrote *In My Back Yard* and *1000 Million Years on the Colorado Plateau*.

Look tells the story of the uranium boom as if he were sitting on a cracker

barrel in a Utah country store, taking time out whenever he deems necessary to drop in a joke or a personal observation or a bit of horse sense philosophy.

Heroes of the story, of course, are uranium millionaires Charlie Steen, the prospector who proved a man isn't a failure if he keeps faith in himself, and Vernon Pick, the determined man who almost killed himself walking, climbing, hiking and crawling after his Delta mine.

Look is writing about a land obviously dear to his heart. He knows the Plateau's history, geography and geology — and he knows its people, both the old timers and the tenderfeet.

He has a word too for the penny stock market, what to do with the uranium once you find it, what the future holds for uranium, and even a layman's interpretation of Einstein's theory which made the U-Boom possible in the first place.

Published by Bell Press, Denver, Colorado; illustrated; 224 pages; \$2.75.

...

CONCISE TRAVEL GUIDE TO 101 NEW MEXICO OUTINGS

101 *Trips in the Land of Enchantment* will make New Mexico outings

more enjoyable and worthwhile for those who buy and use this book.

Written by Betty Woods and edited by *New Mexico Magazine* editor, George Fitzpatrick, the state's top tourist attractions—from the village of Anton Chico to the Zuni Salt Lake—are succinctly described in a charming style which quickly puts the reader in a vacation mood, and never bores. In the time it takes to warm your car engine you can read the pertinent background of the town, ceremony, landmark or outdoor area you are about to visit.

The 101 trips, each with a thumbnail map, and each described in the same amount of space on two pages, include as varied a vacation fare as one would wish.

Published by *New Mexico Magazine*; spiral binding; colored photos; 202 pages; \$2.00.

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Nell Murbarger \$5.75
2. *Lost Mines and Buried Treasures*
John D. Mitchell \$5.00
3. *Good-Bye Death Valley*
L. Burr Belden \$1.25
4. *Death Valley Tales*
Death Valley '49ers, Inc. \$1.00
5. *Geological Story of Death Valley*
Thomas Clements \$1.50

*Based on January sales by Desert Magazine Bookshop.

Miss Murbarger's 328-page book, published by Desert Magazine Press, includes 24 pages of halftone photographs — Guide for Ghost Town hobbyists — Ghost town directory of Nevada, Eastern California and Western Utah — MAPS of some of the best known old mining camps — complete index.

LAND OF SUN, SAND AND SOLITUDE

Here is a selected list of books for those who would become better acquainted with the history, the geography, the wildlife, and especially the courageous men and women who were the pioneers in the great Southwestern region which we call desert.

D9 DEATH VALLEY, The Facts, W. A. Chalfant. Standard handbook, again in print. Geography, climatology, water, geology, mining, plant and animal life. Endmaps, photos. Paper cover.....\$1.95

D10 DESERT COUNTRY, Edwin Corle. Ghost towns, legends, oases, history. Indians—from the Border to Nevada, from the Mojave and Death Valley to the Grand Canyon. 357 pp., index.....\$4.00

D14 LANDMARKS OF NEW MEXICO, E. L. Hewett and M. L. Mauzy. Showing the thousand and one scenic wonders of New Mexico, the landmarks and culture surviving in Indian pueblos. More than a guide book, lavish with fine photographs. 194 pp.\$4.50

D15 THE STORY OF GRAND CANYON. A Panorama of the Southwest, Edwin Corle. History, legend and lore—the rich past and alluring present of Grand Canyon. Index, 312 pp.....\$3.75

D26. ON DESERT TRAILS WITH EVERETT RUESS. Story of a writer-artist who disappeared in the Utah wilderness in 1934. Letters, diary notes, block prints, photographs.....\$2.75

D27 LOAFING ALONG DEATH VALLEY TRAILS, William Caruthers. From a store of excellent material gained through 25 years on Death Valley Trails, this is "a personal narrative of people and places," of such people as Shorty Harris, Charles Brown and many others. Illus. 186 pp.....\$4.25

D30 SHADOW OF THE ARROW, Dr. Margaret Long. New edition of the story of those valiant men and women who crossed Death Valley in 1849. Brilliant research report. 345 pp. Illus.....\$5.00

D32 THE MIRAGE SALESMAN. About Harry Oliver, by his daughters. A whimsical desert digest of refreshing nonsense. 112 pp.....\$3.00

D33 DEATH VALLEY, Ansel Adams. A 56-page condensed pictorial edition for those who would cover fabulous Death Valley's history and scenic wonders in two hours' reading time. Excellent photographs by Adams, with history guide points and map by four associates. Paper.....\$2.50

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D36 DEATH VALLEY HEROINE, L. Burr Belden. Tribute to, and story of, Mrs. Juliet Brier, member of the memorable Jayhawker party in their "shortcut" to California, including her recollections of Christmas Day, 1849. 78 pp.....\$4.00

D37 WE FED THEM CACTUS, by Fabiola Cabeza de Baca. Daily living on a big New Mexican ranch before the "Americano" influences were felt, from the days of the buffalo and Comanche to the founding of modern towns. 186 pp.....\$3.50

D38 WESTERN MEN AND DESERT GOLD, Lee Early and Aim Morhard. Stories, songs, and poems of Death Valley region. Written "from the inside out" by two men who understand and know the desert and mining. Paper.....\$1.00

D39 GEOLOGICAL STORY OF DEATH VALLEY, Thomas Clements. Written by the head of the Department of Geology at the University of Southern California, in language the layman can understand, of that fascinating area. Illus., paper.....\$1.50

D40 THE MANLY MAP AND THE MANLY STORY, Ardis M. Walker. One of the epics of southwestern history; that of the heroic struggle of Wm. Lewis Manly and John Rogers and their companions through Death Valley. Reproduction of their map. Paper.\$1.00

D41 DEATH VALLEY IN '49, William Lewis Manly. Written in his own words, the classic of Death Valley crossing; the day-by-day amazing account of how Manly and his party survived innumerable hardships. Photos, map.....\$6.50

D42 THE DESERT IN PICTURES, published by the Palm Springs Museum. Striking photographs of the geology, geography, flora and fauna. Edited by Edmund Jaeger. Paper.....\$.50

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